LAW AND CONTEMPORARY PROBLEMS

THE PATENT SYSTEM
II

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LAW AND CONTEMPORARY PROBLEMS

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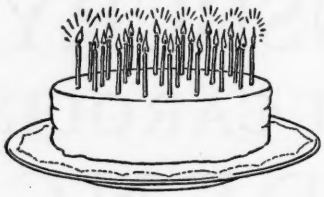

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LAW AND CONTEMPORARY PROBLEMS

VOLUME 13 SPRING, 1948 NUMBER 2

WHAT IS A PATENT?

WALTON HAMILTON* AND IRENE TILL†

I

THE PATENT AND PUBLIC PURPOSE

A patent, or a letter patent, is an open letter addressed to all whom it may concern. The term was used at first for all grants made by the Crown and was as broad as the king's pleasure. In time, and with the rise of constitutional government, it has been narrowed in meaning. The emphasis has shifted from the first to the second word; the noun "letter" has been retired; the adjective "patent" has come to be a noun. The term now stands for a privilege granted by the Federal Government to an individual. Although the word has not entirely outgrown its original meaning —witness the land patent—it most commonly refers to invention. A patent is, then, the grant by the United States to the inventor of a right in his own invention from which all other persons, so long as the grant runs, are excluded. By statute this right is defined as the right to make, use, and vend.

The authority for the grant is a clause in the Constitution. To the Congress is granted the power "to promote the progress of science and useful arts." And the means is specified: "by securing for limited times to inventors the exclusive right to their inventions." The word "patent," be it noted, is not used. The exclusive right is a right, however it may be defined by the Congress, from which all persons save the inventor are excluded. The right is in no sense natural or inalienable.[1]

* B.A. 1907, University of Texas; Ph.D. 1913, University of Michigan; M.A. 1928 (honorary), Yale University. Professor of Law, Yale University, since 1928. Special Assistant to Attorney General, 1938-1945. Author, CURRENT LEGAL PROBLEMS (1915); (with S. May) THE CONTROL OF WAGES (1923); (with H. R. Wright) THE CASE OF BITUMINOUS COAL (1925); (with same) A WAY OF ORDER FOR BITUMINOUS COAL (1928); (with D. Adair) THE POWER TO GOVERN (1937); PRICE AND PRICE POLICIES (1938); THE PATTERN OF COMPETITION (1940); (with Irene Till) ANTITRUST IN ACTION (1940); PATENTS AND FREE ENTERPRISE (1941). Contributor to legal and economic periodicals.

† Ph.D. 1937, Columbia University. Formerly Adviser on Industrial Organizations, Foreign Economic Administration.

[1] Thomas Jefferson, the administrator of the first United States patent law, made this point at some length. "It has been pretended by some, (and in England especially,) that inventors have a natural and exclusive right to their inventions, and not merely for their own lives, but inheritable to their heirs. But while it is a moot question whether the origin of any kind of property is derived from nature at all, it would be singular to admit a natural and even an hereditary right to inventors. It is agreed by those who have seriously considered the subject, that no individual has, of natural right, a separate property in an acre of land, for instance. . . . Stable ownership is the gift of social law, and is given

As a gift of the national legislature it is a privilege; it is by the Constitution made an instrument of public purpose. As an incentive its frame of reference is to promote the progress of science and useful arts. This is the condition under which Congress has power to make the grant; this is the end which, if it is to be justified, the grant must serve.

Under our form of government, intolerant as it is of special privilege, such a grant must be set down as a departure; it is, within the framework of a republic, to be justified only by the importance of the end for which it is invoked. The Fathers who met at Philadelphia were intent upon preventing the political abuses which had been rife in the mother country. They were well acquainted, both from history and by experience, with the excesses which had attended the royal "patent of monopoly." They knew the part the fight against the royal prerogative, finding legislative expression in the Statute of Monopolies, had played in the struggle by which "English liberties" were won and American independence established. Intent upon preventing the recurrence of a "plague of monopolies," they conferred upon the new republic—a government of delegated and limited powers—no general warrant to issue exclusive writs of any kind.[2] The mandate in respect to the exclusive right to the inventor is thus to be read as an exception to the general rule.[3]

late in the progress of society. It would be curious then, if an idea, the fugitive fermentation of an individual brain, could, of natural right, be claimed in exclusive and stable property. If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instructions himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to man to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from any body. Accordingly, it is a fact, as far as I am informed, that England was, until we copied her, the only country on earth, which ever, by a general law, gave a legal right to the exclusive use of an idea. In some other countries it is sometimes done, in a great case, and by a special and personal act, but, generally speaking, other nations have thought that these monopolies produce more embarrassment than advantage to society; and it may be observed that the nations which refuse monopolies of invention, are as fruitful as England in new and useful devices." 6 WRITINGS OF THOMAS JEFFERSON 180-181 (H. A. Washington ed. 1854).

[2] The failure specifically to make this reservation was resented by several of the states. In its proposals for revision of the Constitution at the time of ratification, Massachusetts wanted included a statement that "Congress erect no Company of Merchants with exclusive advantages of commerce"; New York suggested the inclusion that "Congress do not grant Monopolies or erect any Company with exclusive advantages of Commerce." Other states had similar proposals. See DOCUMENTS ON FORMATION OF THE UNION (Library of Congress, 1927).

[3] Even James Madison, generally credited with being the author of the patent clause in the Constitution, occasionally had doubts about the provision. In replying to Jefferson, who wanted a specific anti-monopoly clause in the Bill of Rights, he said: "With regard to Monopolies, they are justly classed among the greatest nuisances in Government. But is it clear that as encouragements to literary works and ingenious discoveries, they are not too valuable to be wholly renounced? Would it not suffice to reserve in all cases a right to the public to abolish the privilege at a price to be specified in the grant of it?" 5 WRITINGS OF JAMES MADISON 1787-1790 274-275 (1904).

And, as an exception, its justification is to be found in the larger public end—over and beyond any gain to the individual—it was meant to serve.

To use an exclusive right, however worthy the purpose, is dangerous business. The instrument is at odds with the economy within which it is set. A letter patent is, within its limits, a monopoly, and the common law—eventually caught up into the antitrust acts—has decreed that our industrial system shall operate as free enterprise. A monopoly removes from the domain of competition all that it encompasses. If the monopoly can be enlarged and perpetuated, it threatens to remove areas of industry from market control and to make of them closed corporate estates. Of this threat the framers of the Constitution were quite aware. Hence they decreed that the "exclusive right" was to run only for a "limited time."[4]

Nor did they specify the letter patent as the only form the inventor's incentive might take. The old Continental Congress had recommended to the states the grant of premiums to encourage the development of new inventions,[5] and had actually considered recompensing James Rumsay for an invention with a gift of thirty thousand acres of land west of the Ohio.[6] James Madison's own proposal at the Constitutional Convention for the reward of invention did not mention the word patents. He proposed the use of "premiums and other provisions" for encouraging the "advancement of useful knowledge and discoveries."[7] The notion that a bonus should be paid the inventor and the invention be then presented to the public had wide popularity, and agitation for such a system continued well after the passage of the first patent act.[8] The device of the patent prevailed for the practi-

[4] How little Madison guessed that the innocuous patent clause in the Constitution would produce such industrial empires as United Shoe Machinery Company, RCA, and General Electric is indicated in his attitude to such corporations: "Incorporated companies, with proper limitations and guards, may, in particular cases, be useful; but they are at best a necessary evil only. Monopolies and perpetuities are objects of just abhorrence. The former are unjust to the existing, the latter, usurpations on the right of future generations." 3 *id.* at 567.

[5] 24 JOUR. CONT. CONG. 515, 516 (1922).

[6] A committee of the Continental Congress recommended "that 30,000 Acres of Land in the new Purchase to the West of Ohio be given to James Rumsay provided he shall before the first day of May next produce good and sufficient Evidence that by means of certain Mechanism of his Invention wrought or aided by three men only, a Boat carrying ten Tons has been moved for six days in succession against the Stream of the R. Ohio at the rate of 50 miles per day. Which Land he shall receive by a draught to be made out of the first Surveys that shall be transmitted to the Treasury after the necessary Proof shall have been made." 28 JOUR CONT. CONG. 350 (1933).

[7] DOCUMENTS ON THE FORMATION OF THE UNION, *supra* note 2 at 564.

[8] A minority of early American inventors of eminence refused to take out any patents. Benjamin Franklin said of one of his inventions in 1742, "Gov'r Thomas was so pleas'd with the construction of this stove, as described in it [a pamphlet], that he offered to give me a patent for the sole vending of them for a term of years; but I declin'd it from a principle which has ever weighed with me on such occasions, viz., *That, as we enjoy great advantages from the inventions of others, we should be glad of an opportunity to serve others by any invention of ours; and this we should do freely and generously.*" 1 WRITINGS OF BENJAMIN FRANKLIN (370 Albert H. Smith, ed. 1907).

When Thomas Jefferson invented a hemp-break, he wrote to a friend, "Something of this kind has been so long wanted by the cultivators of hemp, that as soon as I can speak of its effect with certainty, I shall probably describe it anonymously in the public papers, in order to forestall the prevention of its use by some interloping patentee." 6 WRITINGS OF THOMAS JEFFERSON 506 (H. A. Washington ed. 1854).

cal reason that it was impossible to tell in advance how important an invention would prove to be. It was, accordingly, necessary to see to it that the "limited monopoly" was held to the public office it was intended to serve. To that end two legal restrictions were essential.

The first was to make sure that the area of the grant is properly limited. The patent has been defined as a "private claim on the public domain." And the law demands that the grant, like any other privilege, be narrowly construed. The exclusive right must be severely restricted to the invention; it must not be allowed to cover what lies in the prior art, what belongs to another, or what is a part of the public domain. The boundaries of the grant and of the owner's exclusive right are fixed by the invention; and those rights, no more and no less, the letter conveys. All the ways and means of securing his "reward" are left to the inventor; all the risks which attend "putting it to work" are for him to avoid. The government, in issuing the grant, guarantees to him no compensation; it assures him no right to do whatever is necessary to make his patent a commercial success. His remuneration—if much or less or any at all—must come directly from the exclusive right with which he is endowed in the practice of the invention. It does not, according to the Constitution and the statutes, come from privileges in relation to matters outside the invention.[9]

The second was to make sure that the privilege—confined to its legitimate area—is kept subordinate to the purpose which sanctioned its issue. The Constitution does no more than assure to the inventor the exclusive right in his invention. The statutes, judicial opinion, and practice have conspired to decree that the owner's right is "to make, use, and vend"; and that he may work the patent himself or engage

[9] A number of provisions in the statutes make this clear. A grant of rights in the invention is invalidated if the claim made in the application or set forth in the letter goes beyond the invention. The grant is invalidated in toto if the invention and the method of its practice are not fully disclosed. The only escape which the law allows to the person who claims more than his invention is a timely correction before the Patent Office. There, to save his writ, he must show that the excess of exaggeration, devoid of any attempt to deceive, was due to mistake, accident, or inadvertence. The very condition of the issue is that the applicant shall "particularly point out and distinctly claim the part, improvement or combination which he claims as his invention or discovery." To permit an excessive claim—or to sanction a limited monopoly where the invention is not fully made public—would be to confer privilege when no grant should issue. Thus the letter, in the precision of its boundaries, marks off an area against trespass, reserves against appropriation the prior art, specifies the eventual contribution to the pool of common knowledge. To allow the patent owner to assert rights beyond those conveyed would be to blur the frontiers of the grant, to make standards of possession uncertain, to confuse the office which it is the very purpose of accurate description to serve.

In a number of recent cases the United States Supreme Court has employed this rationale to proclaim the limited scope of the patent grant. United States v. Masonite Corp., 316 U. S. 265 (1942); Ethyl Gasoline Corp. v. United States, 309 U. S. 436 (1940); United Carbon Co. v. Binney & Smith Co., 317 U. S. 228 (1942); United States v. Univis Lens Co., 316 U. S. 241 (1942); Morton Salt Co. v. G. S. Suppiger Co., 314 U. S. 488 (1942); Marconi Wireless Telegraph Co. v. United States, 320 U. S. 1 (1943); Sola Electric Co. v. Jefferson Electric Co., 317 U. S. 173 (1942); Mercoid Corp. v. Mid-Continent Investment Co., 320 U. S. 661 (1944); Precision Instrument Mfg. Co. v. Automotive Maintenance Machinery Co., 324 U. S. 806 (1945); Halliburton Oil Well Cementing Co. v. Walker, 67 Sup. Ct. 6 (1946); Edward Katzinger Co. v. Chicago Metallic Mfg. Co., 67 Sup. Ct. 416 (1947); MacGregor v. Westinghouse Electric Mfg. Co., 67 Sup. Ct. 421 (1947).

others to work it. If he operates through others, an agreement is made and both the contract and the stream of human behavior which results must be measured by—and fall within the tolerance of—the law. If the device of license is employed to put the invention to work, the owner may attach conditions and through them exercise control over his licensee—provided that the conditions imposed are not contrary to the law of the land. Since a limited monopoly is recognized within a competitive economy, great care must be taken to make sure that the exclusive right is not exercised in such a way as to create hazards to free enterprise. A privilege sanctioned for a public purpose is not to be allowed to undo the policy through which the Congress shapes the pattern of industry.[10]

II

THE PATENT AND THE INVENTION

A patent is given for an invention. It follows that an accurate definition of the invention is essential to the issue of the patent. The invention needs to be sharply separated from all that is the previous art, all that as yet has not been found out, all that is not the invention. The task is like that of defining a real property, yet of far greater difficulty. Any area can be divided into personal demesnes by the drawing of precise lines. A private holding in a technological field is not so easily marked off. The land was there all the time ready to be divided; the claim is supposed to encompass something which was not there before. The land to which title is taken requires nothing more than to be marked off; the invention needs to be disentangled from the useful art out of which it is sprung. At times land law presents its perplexities; to expect to stake out an exact claim in the public domain of technology would not in advance seem to be a very promising venture.

It is, in fact, an invitation to headache for the law to undertake to separate by precise lines the novelty from everything else which makes up the useful art of which it has just come to be a part. The new comes out of the old; the innovation emerges out of what has been established. An idea may, as the "next step," be inevitable or within the reach of only the extraordinary man.[11] An idea, familiar to

[10] This paper cannot attempt to enumerate the terms and conditions which lawfully may be lodged in the patent license. It is here enough to insist that the grant, always to be justified by the public purpose it serves, is not to be read as an immunity to the law of the land. No magic to make innocent that which is unlawful lurks in the words "exclusive right." It has become the habit of owners of large portfolios of patents to argue that an exclusive right is a plenary right which the government is without authority to alter or redeem. "The patent owner," so runs the current legend, "is an absolute czar in his realm; he can do as he pleases and is obliged to give reasons to no one." For such an interpretation of "exclusive right" there is no warrant at law or in the history of the statute. The privilege, like all of its kind, is under the law; its legal reference, as specified by the Congress, is always to the purpose of its issue.

[11] "But the question, who commenced the Revolution? is as difficult as that of the first inventors of a thousand good things. For example, who first discovered the principle of gravity? Not Newton; for Galileo, who died the year that Newton was born, had measured its force in the descent of gravid bodies. Who invented the Lavoiserian chemistry? The English say Dr. Black, by the preparatory discovery of latent heat. Who invented the steamboat? Was it Gerbert, the Marquis of Worcester, Newcomen, Savary, Papin, Fitch, Fulton? The fact is, that one new idea leads to another, that to a third,

one art, may be brought as a stranger to another one. A physician in a surgical operation employs a knot he learned as a canal-boy on the Erie. Gunpowder, useful to the Chinese in making a big noise to celebrate ancestors, is used in Western Europe to propel bullets; the vacuum tube, developed in the radio, is carried over to the phonograph. An ironic story tells of Edison spending the better part of two days "playing" with the vacuum tube, then, in a heroic moment, stoutly returning to his "serious business"—which was to tinker a step ahead with the old acoustical phonograph. In the plaything—physically in his hand but a universe away from his mind—he held and missed the superior answer to his immediate problem. Is it invention to make explicit what is implicit? Is it invention to borrow from one useful art to enrich another? What if familiar elements are thrown into an unfamiliar combination? What if there is a severe limit to the number of permutations and the inventor tries them all until he has hit upon the right one? What if familiar processes are adapted to unknown uses?[12]

There is in technology now and then a leap, a break with what has gone before which is sharp and great.[13] But for the most part the useful arts move along by steps, often so gradually that not a single step stands sharply out.[14] An art moves

and so on through a course of time until some one, with whom no one of these ideas was original, combines all together, and produces what is justly called a new invention." 15 WRITINGS OF THOMAS JEFFERSON 163 (Memorial ed. 1904).

[12] These problems were met with at the very inception of our patent laws. Out of his experience as member of the first Patent Board under the 1790 patent statute, Jefferson wrote to Oliver Evans: "You agree in the latter, that the chain of buckets and Archimedes screw are old inventions; that every one had, and still has, a right to use them and the hopper-boy, if that also existed previously, in the forms and constructions known before your patent. . . . Recurring now to the words of your definition, do they mean that, while all are free to use the old string of buckets, and Archimedes' screw for the purposes to which they had been formerly applied, you alone have the exclusive right to apply them to the manufacture of flour? that no one has a right to apply his old machines to all the purposes of which they are susceptible? that every one, for instance, who can apply the hoe, the spade, or the axe to any purpose to which they have not been before applied, may have a patent for the exclusive right to that application? and may exclude all others, under penalties, from so using their hoe, spade, or axe? If this be the meaning, my opinion that the legislature never meant by the patent law to sweep away so extensively the rights of their constituents, to environ everything they touch with snares, is expressed in the letter of August 13, from which I have nothing to retract, nor aught to add but the observation that if a new application of our old machines be a ground of monopoly, the patent law will take from us much more good than it will give. Perhaps it may mean another thing, that while every one has a right to the distinct and separate use of the buckets, the screw, the hopper-boy, in their old forms, the patent gives you the exclusive right to combine their uses on the same object. But if we have a right to use three things separately, I see nothing in reason, or in the patent law, which forbids our using them all together. A man has a right to use a saw, an axe, a plane separately; may he not combine their uses on the same piece of wood? He has a right to use his knife to cut his meat, a fork to hold it; may a patentee take from him the right to combine their use on the same subject? Such a law, instead of enlarging our conveniences, as was intended, would most fearfully abridge them, and crowd us by monopolies out of the use of the things we have." 6 WRITINGS OF THOMAS JEFFERSON 297, 298, 299 (H. A. Washington ed. 1854).

[13] A striking example of this in recent times has been invention by Major E. H. Armstrong of frequency modulation, which threatens to revolutionize the radio industry.

[14] All congressional hearings with respect to patents and invention are replete with testimony to this effect. A witness testifying in 1878 said, "All inventions run in lines. There is a certain progress and a steady improvement in all the arts, and, as I shall show in the course of my remarks, not by virtue of the patent law exclusively. These lines of invention are what is called 'the art.' Mr. A starts on one of these lines of invention to remedy an existing evil. He studies over the matter and gets one element. It

with the accumulated force of all that lies behind it; in our age it moves with accelerated speed. Its progress, if left unchecked, almost takes care of itself.[15] Even today a patent is taken out by "the sole and true inventor." The theory is that the invention is the brain-child of a single person, or at most of two or three persons working together. An assumption which was of doubtful truth when the Constitution was drawn up in 1787 is still preserved.[16] Yet now most scientific work is carried on by organized groups, permanent bodies, with research workers who come and go.[17] In a continuous process of discovery, constantly refreshed by ideas from many quarters, the usual invention is of multiple authorship. Shall we, therefore, award the patent to the man who takes the last useful step in a continuous process of finding out? Or shall we attempt to reward all of those whose contributions were essential to the result? Or shall we set the invention down to a community of scientists, whose work cannot be individually isolated? And how, when the climate

makes no difference whether it is a machine or a process that is to be patented. His patent is inapplicable; it is not used at all; but he started in the right direction, and the claim of his patent covers one element of the final solution of the difficulty.

"Mr. B builds upon that, perhaps independently of A, so far as personal knowledge is concerned, and adds a second element. He has to use the first element, and consequently he gets a combination claim in his patent. He does not solve the difficulty. Mr. C adds still a third element to the other two, traveling in the same line, not necessarily knowing what the others have done. He builds upon their work, but traveling in the same line his machine or process necessarily involves the two elements invented by these other men, and Mr. C gets a combination claim for his three elements. Now, you cannot use Mr. C's patent without paying Mr. C for it, but neither can you use Mr. C's patent without paying also Mr. A and Mr. B. C's patent is perfectly valid. He has a good claim for those three elements, but his patent is subject to the other two patents, the first of which covers one element and the second covering two elements." Testimony of J. H. Raymond in *Arguments before the Committee on Patents of the Senate and House of Representatives,* 45th Cong., 2d Sess. 110 (1878).

[15] Examples of patents declared invalid where the changes were found to be such that a person skilled in the particular art could make them whenever occasion should arise include the following: Thomson-Houston Electric Co. v. Lorain Steel Co., 117 Fed. 249 (C. C. A. 2d 1902) (Pat. No. 390,921); Bromley Bros. Carpet Co. v. Stewart, 51 Fed. 912 (E. D. Pa. 1892) (Pat. No. 418,349 for a carpet loom); Elliott & Co. v. Youngstown Car Mfg. Co., 181 Fed 345 (C. C. A. 3d 1910) (Patent No. 771,774 for a blue-print machine); American Chain Co., Inc. v. Cox Brass Mfg. Co., 292 Fed. 624 (E. D. Ohio 1922) (Patent No. 1,374,893 for an automobile bumper). The courts in such cases have found it difficult to discover just what changes a person skilled in the particular art would make as a matter of course, but have been helped to their conclusions by the fact that the patented changes had been made simultaneously and independently by different inventors.

[16] Even in the early days of the republic, departures from beaten paths could not always be specified as the work of a particular person. At a certain time the idea of the steamboat was in the air; a number of persons could with some show of reason claim it as their own; and even today we cannot identify the true inventor beyond a reasonable doubt. William Henry, of Lancaster, Pennsylvania, completed a paddle-wheel steamboat in 1763 which sank in the Conestoga River on its first trip. James Rumsay experimented with a steamboat on the Potomac at Shepherdstown, West Virginia, in 1774 and 1786. John Fitch demonstrated a boat to the members of the Constitutional Convention in 1787 and placed a boat in commercial service in 1790. Other pioneers include Samuel Morey, Nathan Read, Oliver Evans, Elijah Ormsbee. Robert Fulton with his first boat, the "Clermont," is credited with being the first successful builder of a commercial steamboat. He at least possessed the "know-how," though it would be difficult to prove that he was the inventor.

[17] Just before the war, Patent No. 2,281,613, in respect to butadiene, a synthetic rubber, was granted by our Patent Office to Heinz Wollthan and Wilhelm Becker, both of Germany, and assigned—even before it was granted—to Jasco, a Louisiana corporation owned jointly by I. G. Farben and Standard Oil. One could not say that Herr Wollthan and Herr Becker had no hand in the matter. But a most superficial knowledge of the synthetic rubber process is enough to disclose that their work could have been but a single factor in the invention.

of opinion plays a dominant role and there is a constant interchange of fact and idea, is the contribution of the individual to be isolated?

Since the law postulates an inventor, the patent is taken out in the name of a particular person. Yet the sole and true inventor—like the economic man and the reasonable man of the law—is a hypothetical being in whose name a system operates. The Patent Office takes the inventor on faith; it does not—unless two persons are laying claim to the same invention—go back of the statement made in the application.[18] This leaves the matter, not to the inventor, but to the party really responsible for the application. A corporation which maintains a research staff chooses the person who is to stand as inventor for purposes of the patent.[19] For this role, anyone who has had a hand—even a minor one—in bringing the novelty into being is eligible for the office of the inventor. Quite frequently the head of the laboratory signs the papers, even when his connection has been wholly administrative and in no sense scientific or technical.[20]

Most discoveries patented today can be anticipated. They can also be assured in advance—given the time, the technicians, and the funds. Of these the funds are the mightiest. The discovery will be made by the person or the group who gets the money for the experimental work. And for the most part, technicians are not self-starters.[21] The bulk of them, in fact, are captive; the ones in corporate employ are told by business executives what problems to work on. The garret-dweller, whatever his innate abilities, has little chance to invent if the use of a laboratory and a complement of expensive mechanisms are essential to the result. The solo inventor's real opportunity is to seize or blunder upon a pioneer idea; as a technology foliates from its base, his self-reliance is hardly a match for a bevy of experts who can be kept on the job. Above all, access to the art in action is essential to its advancement. The man who stands on the sidelines and speculates can hardly prove as effective as the technician who has at hand a going shop in which to try out every idea. There is, therefore, not even an approach to equality of opportunity for the inventor. The chance to invent is not only a matter of consequence; it is as well a pecuniary asset of great value. A captive technology offers no chance to invent except to those already in control, or to others on such terms as those in control dictate.

[18] Even in the case of a conflict—technically known as an interference—it does not always have to probe into the validity of the applicant's claim. The concern of its primary inquiry is priority—to discover which applicant can establish the earlier date. Thus, save in the exceptional case, the Patent Office does not go back of the returns.

[19] As Mr. Kettering of the General Motors research staff stated at the TNEC hearings, "No, there is not a lack of specific technicians. You can get somebody to do anything you want done." *Hearings before the Temporary National Economic Committee*, Pt. 30, 76th Cong., 3d Sess. 16310 (1940).

[20] The hearings of the Senate Patents Committee in 1942 show, in respect to the patents for butyl rubber taken out by Standard Oil, that the patents were taken out in the name of a certain Frolich who was not even in the United States when the experimental work was done.

[21] Kettering has described invention as "team play" and has stated, "We want to keep these fellows from becoming individuals. If we gave the bonus for a new invention to the specific man under whose care it was done, then these fellows would just begin to make little cliques. . . ." *Hearings before the Temporary National Economic Committee*, Pt. 30, 76th Cong., 3d Sess. 16310 (1940).

A task of consequence is to disentangle the invention from the developing art in which it is set. The heart of the question is the novel—and workable—idea. Is "the inventor" responsible for the big idea? Or did he, following timidly where others had boldly blazed the way, merely take an all-but-obvious step or contrive a variation on a well-known device? A simple illustration will make the point. Was the safety razor a single invention, or are there as many inventions as there are distinct types on the market? It would seem that the basic notion was to attach a blade—which once used could be thrown away—at a perpendicular angle to the handle and to protect the face from the blade by a guard. Given the original safety razor, size, angle, relation of parts can be changed; the man of little imagination may ring an infinite number of permutations on the old Gillette. Is there, then, one invention to be patented, or are there thirty or three hundred? And is it the novel way to shave that is the invention, or does invention lurk in arrangement and quantitative differences among like parts?[22]

It would seem that unless, in relation to the impinging art, the invention can be given a clear-cut identity, no patent should issue. Unfortunately, the salutary rule that the patent is limited to the actual invention enjoys greater repute in the courts than in the Patent Office.[23] If the examiners acted solely upon the injunction to advance "the progress of science and useful arts," they would isolate the advance before blessing it with a patent. But, where the Patent Office assumes that an invention claimed is an invention made—unless disproved by a hurried and routine procedure—the machinery of examination is set for multiple grants.[24] And the patrons of the Patent Office—if they may be so defined—have been resourceful in capitalizing

[22] In 1935 Waldemar Kaempffert, science editor of the New York Times, pointed out that 90,000 patents were being taken out annually, and over 2,000,000 patents had been issued by the Patent Office. He said, "It would be astounding if there were 2,000,000 first class inventions." *Hearings before the House Committee on Patents on H. R. 4523*, Pt. 1, 74th Cong., 1st Sess. 874 (1935). The same situation had been pointed out before. In 1928 Fred S. Armstrong, an inventor, told a congressional committee, "I just saw by the report of the Commissioner of Patents that last year the Patent Office ran behind because there was such a run of patents. There were 89,000 patents, and I want to tell you that there were not 89,000 inventions in the last year. If there were really 1,000 inventions there were a lot of them." *Hearings before the Senate Committee on Patents on S. 2783*, 70th Cong., 1st Sess. 68 (1928).

[23] Judge Learned Hand cautions us ". . . not to mistake for invention the . . . inevitable progress of an industry through trial and error," and not to "confer a monopoly merely upon the exercise of persistent and intelligent research for improvement," in which he finds no invention at all. Picard v. United Aircraft Corp., 128 F. 2d 632, 636 (C. C. A. 2d 1942). A failure to follow this caution is a failure to define the invention. It sometimes happens that the invention lies implicit in a great scientific discovery which is not eligible for a patent; and that the invention, upon which the patent is granted, is no more than an application which any one of a host of technicians could have worked out.

[24] This situation has been decried in congressional hearings for decades. As early as 1878 one witness pointed out: "They have gone on now at the Patent Office so that they have educated a body of examiners there who can discriminate where there is no difference; and that is how the land comes to be flooded with these conflicting patents. The ingenuity of man runs in a particular channel; and when a thing becomes popular men work to get a share in the profits; and the Patent Office is flooded with patents so that a plain and ordinary man cannot, for the life of him, see the difference between one thing which has been patented and another which has been patented; and therefore the task of deciding is transferred to the courts." Testimony of S. A. Hurlbut, in *Hearings before the Committee on Patents of the Senate and House of Representatives*, 45th Cong., 2d Sess. 442 (1878).

such frailties in the process of issue. It is the very purpose of the patent lawyer to flood the office with an endless stream of applications. In the field in which his client operates he wants to lay legal claim to all that is, or may become, a part of the technical process. The arsenal serves the double purpose of an armament to ward off competitors and an array of choice weapons with which to attack them.

A single case will outline the general strategy. The Ethyl Gasoline Corporation took out a single patent on the Midgley process for combining gasoline with tetraethyl lead. Then, to entrench this patent in a strategic position in a field of industrial use, a host of applications were filed. One patent applied for was for gasoline and a volatile compound of lead other than tetraethyl. Another was for gasoline burned in the presence of a gaseous ethyl compound of a metal. A third was for a compound of tetraethyl lead used as a pellet rather than a fluid. One group of five patents covered gasoline, tetraethyl lead, and at least one other agent. Four patents covered tetraethyl lead combined with other lead compounds. A group of eight—all granted on the same day—covered a volatile compound of metals other than lead. Specifically, one patent made use of selenium; another, tellurium; and others, arsenic, cadmium, bismuth, titanium, tin, nickel carbonyl, antimony. One patent was for a phosphorus compound, three for aniline; three for substances other than organic metal compounds—ammonia, benzol, iodine. And six were for patent processes for atomizing the antiknock substance. One patent was for adding tetraethyl lead at the time the fuel is dispensed to the consumer, and thirty-one were made to cover processes for the manufacture of tetraethyl lead or other compounds. Similar patents have been added from year to year. The end was to exclude all invention—if such mechanical combinations could be called invention—in a field of use dominated by a single simple idea: the mere addition of an antiknock substance to gasoline.[25]

Note that, save for the initial idea, there is hardly a trace of novelty here. Not even experimental work was necessary as a preliminary to the applications filed in the Patent Office. It cannot be positively asserted that they were worked out without benefit of a laboratory. But the whole lot could easily have been mapped out by a man familiar with the chemical field without any indulgence in practical trial and error.[26] His requisites need have been no more than a model application form, a few hours of time, and a typewriter. Under such a process of issue, it is a matter of course that grants overlap, get tangled, usurp the same technical domain.

[25] After the company had firmly entrenched itself in its heavily buttressed patent monopoly, the outlawing of its pricing practices by the United States Supreme Court (Ethyl Gasoline Corp. v. United States, 309 U. S. 436 (1940)) had not the slightest effect upon the traditional two-cent retail differential between ethyl and standard grades of gasoline.

[26] While the Ethyl Corporation was developing a volatile compound of lead, I. G. Farbenindustrie was engaged upon similar experimental work with iron. I. G. took out a number of patents upon this alternative process, the validity of which was not questioned by Ethyl. In fact, a contract between the parties made Ethyl the agent of I. G. in the sale of this particular volatile compound in the United States. In function, in action, in process, the lead compound and the iron compound are identical. The only essential difference—a difference which it would not take a scientist to think up—is the shift from lead to iron as the antiknock agent.

III

THE BLURRED EDGES OF THE GRANT

A direct mind would assume: one invention, one claim. The mind habituated to patent usage realizes that in the claim he has a mighty asset. He wishes to blanket with his patent as large a technical area as possible; to that end an elaboration of claims is a handy instrument. A single grant covers the whole process of frequency modulation. Separate grants might have been taken out for transmission and reception. Or a number of patents might have been secured upon each of the two mechanisms in which the invention was realized. Or the basic patent might have been "fortified" by a series of patents on the parts of the equipment. The "covering" technique not used here is, however, subject to rather general employment. In securing its patents the United Shoe Machinery Company takes full advantage of multiple grants. So do other large corporations, such as RCA, General Electric, and du Pont, to whom a large "portfolio" of patents is an essential stock in trade.[27] The process of fragmentation presents distinct assets. Grants may be made to overlap; gaps may be left between the separate patents; the sum of the patents may be more or less than the process it professes to cover; the disclosure may fall short of a revelation of the technique.[28]

The reason for the practice is no mystery. The Patent Office—rather than the statute—tolerates a multiplication of claims. The patent applicant uses a device which is tolerated to make his protection as broad and secure as possible. A large number of claims are made to stand for a single discovery, "each spreading the patent in a different direction like the ribs of an umbrella."[29] The notion is that if one, two, several of these fail to stand up, there are others in reserve to fall back on. And, even if it is easy to explode a single claim, it is not an easy matter to break through the cordon and have all declared invalid. The process of elaboration, by resort to the art of drafting, does not add one scintilla to the discovery; in however

[27] For an illustrative list of patents held by large corporations, see Appendix to *House Hearings on Act Authorizing the Federal Trade Commission to Accept and Administer Government Patents* 3408 *ff.* (1939). General Electric controls between 8,000 and 9,000 patents; American Telephone and Telegraph, 15,000; International Harvester, 1,000. Most of the companies reporting stated that only a very small proportion of patents taken out were in actual use.

[28] Consider the possibilities. An invention may be of primitive simplicity; yet it can be viewed from a number of different angles. It can be described in sheer mechanical terms; on this level there can be as many claims as there are plausible permutations of wheels, bolts, rivets, parts. It can then be described in terms of a process which, if verbal ingenuity holds out, can be elaborated into a series of processes, each of which attains legal dignity as a claim. Then it can be described in terms of the function it is held out to perform; and a function, at the hands of an expert craftsman, can be made to beget other functions, any one of which is good for a claim. And, finally, that the several descriptions shall not stand out in isolation, a kind of over-all halo may be set down "in different degrees of polysyllabic complexity in order to give an appearance of profundity." Although now the job is done, for good measure—and in the hope that more of them may get by—a number of claims may be copied bodily from other publications. *E pluribus unum* is set into reverse.

[29] Monsanto Chemical Co. v. Coe, 145 F. 2d 18, 19 (App. D. C. 1944). Another judge has recently referred to a "proliferation of patents." United States v. National Lead Co., 63 F. Supp. 513, 532 (S. D. N. Y. 1945).

many forms it is encased in words, a single invention remains a single invention. It does, however, blur the edges of the patent and it does drive a line between the patent and the invention.

As the edges of the patent are blurred, it is not easy to determine what has been granted and what has been withheld. The Patent Office cannot be quite certain what it has sworn away. So it is to be expected that in instances—in fact, quite habitually—grants will overlap, and that two or more persons may secure patents for what is in essence a single invention. In the usual case the patents are not exactly alike; logomachy has too many possibilities for that. And even in material terms there may be technical differences. In the fields of chemicals and metallurgy particularly there is abundant opportunity for variation without essential difference. The materials may be slightly altered; the steps which make up the process may be set down in a somewhat different order. The invention may be rather differently resolved into its parts, for each of which a separate patent is asked. Since the division can be done in different ways, the several patents in the two or more series will fail to correspond—although the sum of the patents of one inventor is the equivalent of the sum of patents held by the other. The use of technical language and the overelaboration of description may be so skillfully effected as to make the two sets of applications appear very different in the sight of the Patent Office. Such differences may be small or great; they are likely to be in particulars, not in principle. The norms of the scientist would reveal far fewer and less sharp distinctions than the official examiners manage to discover. As thus a single novelty comes to support a multiplex of grants, the norm for a true invention threatens to be lost.

Nowhere in the economy is there need for sharper definition than with the letter patent; yet the Patent Office fails to fit out with sharp edges the writs it issues. If it is desirable that the inventor secure an exclusive right in his invention, it is equally essential that his privilege shall not trespass upon what is not his. He has no claim to the prior art, to any antecedent scientific discovery, to any bit of technology which lies to right or left. That which is his contribution needs, as a condition of the grant, to be sharply separated from all to which it is related. Unless that is done, the patent owner may assert a private claim to some part of the fund of common knowledge; he may assert a monopoly over techniques which all members of the industry are legally free to use. The United States Supreme Court has denied access to equity to owners who use their patents beyond the limits of the grant.[80] The sharpest sort of definition is necessary to protect the public domain against technological trespass.

At present the Patent Office accords no such protection to the right of the public in technology. The applicant employs the broadest sort of language; he claims all that he has any chance to get. Even if he knows how limited his contribution is,

[80] Morton Salt Co. v. G. S. Suppiger Co., 314 U. S. 488 (1942); Mercoid Corp. v. Mid-Continent Investment Co., 320 U. S. 661 (1944); Hartford-Empire Co. v. United States, 323 U. S. 386 (1945); United States v. National Lead Co., 67 Sup. Ct. 1634 (1947).

he has no incentive to erect modest barriers upon his own preserves. If he can secure title to more than he has created, so much the greater is his strategic hold upon the whole of a useful art. Such a hazard is likely to be minimized by the beneficiaries of the system. The usual apologist professes to see no danger of the patent owner's claiming what is not his.[31] This bit of folklore is rather more comfortable than akin to the facts of life. A huge number of outstanding patents have been drawn with little regard to trespass on the public domain. Today, in view of the general dissemination of scientific and technical knowledge, not one but many persons—given access to the present state of the art—have the capacity to make the invention. And each year a flood of patents are granted which close to the craft of scientists opportunities to invent. Almost all invention, under the conditions of today, is carried on within—not without—the public domain. This circumstance demands utmost precision in marking out the boundaries of grants.

In the light of this situation, the letter which now issues from the Patent Office does not—and cannot—have finality. The degree of presumption set down in its favor must reflect the character and thoroughness of the inquiry which precedes its issue. The bevy of claims attending multiple patents for a single invention presents a docket of issues quite beyond the capacity of the Patent Office expeditiously to resolve. The examiner, in making his decision, must depend upon a hurried search through scanty materials. He has at hand no such voluminous and searching a body of materials as opposing lawyers present when an infringement suit is fought out by adverse parties in open court. As the patent issues, its boundaries are only vaguely defined, and whether or not there should be a grant at all is a question which has received only a tentative answer.

The patent carries—and as matters now go can be made to carry—no warranty. The Patent Office does not stand—it could not stand—back of its grants. The writs it issues are worth whatever they are found to be worth later in a bout at law. The letter gives to its owner the right to go into court and there bring suit against any person who without his consent makes use of the invention. In the trial a number of defenses are open to the alleged infringer. He can produce a patent of his own; he can insist that he has not trespassed upon forbidden territory; he may deny novelty in the invention. Then the question of the boundary between grants, of the frontier between the well known and the novel, must be threshed out anew. The patent is little more than a ticket of admission to the courts. The Patent Office guarantees nothing but a chance at litigation.

[31] "Patents represent an addition to, and not a subtraction from the public wealth; the giving of something to the public, not taking anything away from it." GEORGE E. FOLK, PATENTS AND INDUSTRIAL PROGRESS 387 (1942). Folk has been patent advisor to the National Association of Manufacturers, and for twenty years was general patent attorney for American Telephone & Telegraph Company.

IV

THE PROBLEM OF POLICY

The patent system has gone astray. About a nucleus in the law, a great body of usages for which the law furnishes no sanction has been developed. Large segments of the industrial domain have been engulfed in a flood of patents and caught up in the control of one or a few dominant corporations;[32] whole industries have had their policies lock-stepped through the pooling of patents, under which a handful of industrial giants act as one.[33] And as the activities of these corporations have spread out and beyond national frontiers, there have sprung up—under the sanction of the patent—international trade accords among the industrial elect. The negotiations of the gentlemen of Standard Oil and I. G. Farben, of du Pont and Imperial Chemical Industries, despite the intricacy and detail of the problems, met with far greater success than the accords achieved by their governments; an amity and understanding developed rapidly which made a resort to—even a threat of—violence unthinkable.[34] In each instance the patent has been the instrument for setting limits on production, establishing restricted market areas for members, curbing the unruly advance of technology, setting prices, and fixing other terms for the control of the industry.

Today we have no established policy with respect to the place of the useful arts in the national economy. There is no policy in respect to the encouragement of invention, its introduction into the industrial system, the control of its own devastating consequences. Instead we have allowed technology to become captive to the corporate estate, where its advance or stagnation has had to wait upon the irrelevant prompting of the profit motive. Despite the reiterated beat of the problem—the same points made over and over again at congressional hearings—Congress has continued to turn a deaf ear to patents, to the extra-legal uses to which the grants have been put, to the neglect and even stifling of fundamental inquiry. The ad-

[32] See, for example, the *Hartford* and *National Lead* cases, which are ably discussed in Marcus, *Patents, Antitrust Law and Antitrust Judgments Through Hartford-Empire*, 34 GEO. L. J. 1 (1945), and Zlinkoff and Barnard, *The Supreme Court and a Competitive Economy: 1946 Term*, 47 COL. L. REV. 914 (1947).

[33] Samuel E. Darby, prominent patent attorney, in presenting a picture of the RCA patent monopoly, has stated: "Due to the fact that these large corporations maintain a large staff of patent solicitors who are devoting their energies to grinding out patents, it is inevitable that patents of one company of the pool overlie or so closely ally with patents of other companies of the pool that, as a result of the patent pooling, and the close cooperation of the patent solicitors made possible thereunder, it becomes difficult, if not impossible, as a practical matter, to manufacture any commodity in this industry, even under license from one of the companies, without infringing, in terms at least, upon one or more patents of another member of the pool. To offset this, therefore, a cautious manufacturer is required to go from door to door begging a license from each, and agreeing to pay any royalty each requires, to a point where, logically, the royalties, in total sum, may equal or exceed the cost of manufacture of the device itself." *Hearings before the House Committee on Patents on H. R. 4523*, Pt. 1, 74th Cong., 1st Sess. 999 (1935).

[34] For a discussion of these agreements and the documents, see *Hearings before the Senate Committee on Patents, supra* note 22.

vances which have been made, now painfully slow, now turbulent, have come in spite of public neglect.

It is hard to realize how antique, how very antique, our patent policy is. Our present patent act, with a few amendments largely procedural, goes back to the 1830's; in its essence it is little changed from the initial acts of the 1790's. Think what a labor policy, an investment policy, a taxation policy would be today, if it represented the legislative will of 1793 even with such change as has come to it in extra-legal ways. The present patent system represents, not a conscious commitment of public policy, but the acts of persons who have attempted to turn the system to their own advantage. The lack of a policy in respect to technology is a great—perhaps the greatest—source of national weakness at the present time.

The useful arts stand at the very center of the economy. It is the useful arts which determine the forms into which labor and capital are cast. It is the advance of the industrial arts which creates or denies opportunities for enterprise and for employment. It was the emergence of a new technology which ushered in the industrial revolution; it is the constant shift in technology which makes the industrial revolution a continous process. It was once said that the standard of life was pent in by our limited resources. We now know that technology is the more fundamental factor; that our natural resources are largely what the current state of our industrial arts makes them. By invention and discovery we find potential wealth in what otherwise would be inert matter. A new technique creates new wealth; an advance in technology secures more out of familiar resources. The rate of technical advance is an index to the progress of the nation. The patent must be restored to its constitutional office; it must again become an instrument to the progress of science and useful arts.

PATENTS AND COMPETITION IN THE AUTOMOBILE INDUSTRY

C. A. WELSH*

In any context the part which patents play in enhancing or minimizing competition in the industrial arts at large is a question which evokes a chorus of dissonant response. Even in a particular industry the place of patents is seldom what it seems and the effects of patents are often similar to the famous "riddle wrapped in mystery inside an enigma." In the automobile industry "perhaps there is a key"—a key designed by the history of the industry—which unlocks one of the most singular patent situations in modern technology.

The American economy has been called an experiment in transportation. Space has shaped many of the nation's ways of living and developing, has influenced the character and location of its industries, and has given to means of transportation a predominant role in the growth and continuous functioning of the economy as a whole.[1]

It is from this perspective that the emergence and operation of the automobile industry are most clearly comprehended. Yet in many respects the dependence of the economy upon automotive transport is only a fragmentary definition of the place which the industry occupies. Today the American automobile industry is the most characteristic of all branches of production in the national economy. When others speak of the industrial power of the United States, the millions of American autos are the most visible manifestation of that productive power, as the factories which make automobiles, the roads upon which they travel, the thousands of service stations and garages, and the millions of people whose work, prosperity, and pleasures are so largely linked to the automobile represent to the rest of the world a distinctive symbol of American productive capacities, natural resources, and material advancement.[2]

It is understandable that no other country and no other people have accorded to the automobile the status and attention which Americans bestow upon their cars. The role of the automobile industry in World War II and the shortages of supply of postwar cars have served to make the American people more automobile con-

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[1] ROGER BURLINGAME, MARCH OF THE IRON MEN 197 (1938).

[2] *Cf.* T. C. COCHRAN AND W. MILLER, THE AGE OF ENTERPRISE 185-188 (1942).

scious, if that is possible, than they have been in the past. Prognostications of things to come in the industry receive the most serious consideration which this country's citizens reserve for the ultimates of a well-balanced national life. Quite simply, the automobile is a crest of economic prowess which this country has adopted, as well as a tangible essential of its livelihood.

On a more purely economic plane, however, the automobile industry itself is a primary factor in the operation of the industrial system. The demands which it makes upon raw materials, fabricated products, and corollary goods and services speak of its critical importance in the industrial structure. The fluctuations in its output, prices, and employment at any given time are readings of the pulse of the economy and portents of its immediate future.

Obviously such an industry has a very high coefficient of patentability. If it is considered that more than fifteen thousand items are assembled in an automobile, drawing upon a large number of mechanical, electrical, and chemical industries, it would seem inevitable that patent problems would pose continuous difficulty to the industry. As it has turned out, however, it can be said at the outset that the patent adjustments in the automobile industry are a case study of the way in which technical, economic, legal, and human elements have worked out what approaches an optimum answer to the patent question.

To appraise with any accuracy the effect of patents upon competition in the industry it is necessary to glance briefly at several factors which might ordinarily be taken for granted. In its evolution the automobile industry has followed tendencies which parallel and are analogous to patterns throughout the industrial system. In some respects the automotive industry has been a causal factor acting upon other fields, while in other ways lines of growth in the industry have resulted from conditions external to its own structure. In still other respects the organization and functioning of the automotive industry are unique, so that within the industry itself there are circumstances which differ even from those found in immediately adjunct branches of production upon which the automotive industry is dependent or which it has brought into existence in consequence of its own requirements.

Similar complexity marks the organization and market characteristics of the automobile industry. Hence, all of the common difficulties of evaluating the presence or absence of competition in ordinary economic affairs, the extent, character, and locus of monopoly, and the peculiarities of the market which account for the particular ratio of monopoly, or competition, or monopolistic competition, are compounded in any effort to assess the automotive industry as a separate entity. In absolute terms it is possible to say that the production of automobiles is not an edifice of monopoly nor is it purely competitive in any accepted sense of classical competition. The problem, therefore, is to determine the relative proportions in which an admixture exists and upon that basis to seek some measurement, even in terms of "more or less," which will indicate whether the production and distribution of auto-

motive vehicles is conditioned by dominant monopoly elements or by essentially competitive factors.

In any ordinary industry it is possible to set up some rather limited criteria which will serve to identify monopoly, especially in the presence of patents, and conversely to indicate the presence of any competitive residuum. In the automobile industry, however, we are confronted with economic activities of such scope and magnitude that even the magic field equations from higher mathematics, if they could be applied directly to economic behavior, would scarcely serve to yield an elegant solution.

This is obvious if we consider the sources of materials from which the automobile as a final product is fabricated, or the relation of initial supplies to automobile manufacturers. Some of the materials are widely dispersed economically, some are highly concentrated. Quality differences play an important part in the source materials of automobile production and immense scales of supply and demand govern the source markets. The nature of the product of the industry is itself equivocal, ambivalent, and economically paradoxical. Automobiles are in some ways sufficiently standardized to produce a degree of homogeneity. Yet they are sufficiently variable so that marginal and trivial differences can result in very large imbalances in the market. In several instances there are both variety and standardization in the products of a single manufacturer. Automobiles are at once consumers' goods and producers' goods, joint products and single commodities. In the market the automobile industry encounters a composite of elasticity of demand and stability, of brand differentiation and brand loyalty, with highly arbitrary, capricious, and unpredictable oscillations in consumer choice.

The growth and the structure of the industry are similarly mixed in the story which they tell. In many ways the development of the automobile industry has paralleled the course of American industry in general since 1900, passing through phases of combination, competition, depression, extraordinary long-term increase in capacity, periods of misproduction and misjudgment, the emergence of a dominant few, and the persistent encroachment of potential competition upon the markets of those who would be monopolists. In some phases of its activities the automobile industry is an example par excellence of extreme integration, both vertical and horizonal. In still other phases it has maintained a competitive ebb and flow of market relations. It has had trade groupings and associations almost continuously since its foundation, but it has also had conspicuous and ever-present challengers to any concert of interests.

Even in the composition of the industry there are wide differences in the relative size of firms, in the stability of a few and the instability of the many, and in the way in which the fortunes of some members have risen and fallen at various times and in consequence of diverse causes. There are differences also in the degree to which firms in the industry are related to interests outside the industry. Examples are present of both large and small producers financially self-contained and of producers, great and little, whose autonomy is limited to matters of minor choice and

whose major policies and direction stem from other spheres of industry and finance.

Many of these same equivocal interpretations attach to the problems of pricing policy, price leadership, and price competition in the automobile industry. There are both price uniformity and potential and actual competitive differences in the ways in which prices are determined. Even more than supply, however, demand in normal years has exhibited both competitive volatility and monopoly fixation, by custom as much as by design. Economic observers have differed widely on the price characteristics of the automobile industry, especially from the standpoint of interpreting the competitive and monopolistic significance of price differences and of price-setting techniques. Factors indicating arbitrary restrictions and control coexist with circumstances which would appear to make such control illusory at best. Even in the highly distorted aftermath of war, under conditions which load the economic dice on the side of the large seller as the principal beneficiary of a seller's market throughout industry in general and an intense seller's market in the automobile industry in particular, there are concrete manifestations of a competitive nature both in access of new producers to the industry, in buyer reaction, and in the differences in the circumstances governing the behavior of producers as well as their prospects for the future.

In an economic universe of such commingled control and freedom, it is extremely difficult to determine how a single element such as patents has affected competition. The necessity for this general economic prelude is at once apparent if it is stated that, although patents are not now a major instrument of monopoly domination in the field, they have been so in the past. What is more, if the existing concentration of market control should increase, or if the relative economic power of any one of the major automobile producers should go beyond its present boundaries, or, in the case of the largest unit, even be sustained over any very long period, it would again be possible for patent control, especially over the developments in parts, to be employed with sufficient coercive force to achieve an effective monopoly position. In other words, the utilization of patents is a function in this instance of broader economic considerations, even though it is always possible that any particular patented development will be used to extend an existing area of power. The reasons for this situation reach back to the beginnings of the industry and can be understood only in the light of the way in which patents first affected automobile production.

There is an element of high economic comedy as well as of very serious industrial conflict in the initial convergence of the patent question with the automobile industry. There had been at various times in the nineteenth century some European patents granted relating to the automobile, but these were not extended to the United States.[3] It was, therefore, an event similar to the opening scene of classic drama when George B. Selden, a patent attorney, in 1879 applied for a patent on an automotive vehicle employing an internal combustion engine using hydrocarbon fuel.

[3] *Cf.* T. J. Ross, *The Automotive Industry*, in THE DEVELOPMENT OF AMERICAN INDUSTRIES 695 (1941).

This patent is perhaps one of the most famous in industrial history. The story of its effect upon the development of the automobile industry has been told and retold with sufficient variation and disagreement, even in the most minute details of motive and results, that every telling has altered somewhat the sequence and significance of the tale. By some students, the application for the Selden patent and its development and use have been likened to a *lettre de cachet* coldly calculated to kidnap an infant art, to hold it in bondage to maturity and in serfdom thereafter, and to reap the rewards of the labor of a giant by imprisoning on paper the identity of a newborn industry. In contrast with this Gothic literary version are the views held by those who maintain that the story of the Selden patent is a saga of foresight representing simply the judicious adaptation of the opportunities which the patent system offers, or at least offered then, to the canny applicant.

Thus, for example, Selden's claims were withdrawn, modified, and reworded time after time in the years following 1879. "By shrewd, but quite legal, methods he succeeded in keeping his patent from being granted for sixteen years; . . ."[4] Under the statute of 1861 it was provided that an applicant must necessarily reply to an action on the part of the Patent Commissioner within two years:

> By legal reasoning, this is interpreted to mean that he could not be compelled to reply more promptly than that. If it requires but three or four months for the Patent Office itself to act, and frequently it has required much longer than this, it means that every letter that the Patent Office sends out means a further delay of 2 years and 3 months. It does not take very many such letters to prolong the prosecution [of the patent] indefinitely. It was under the statute in this form that the Selden patent was filed in the Patent Office in 1879 and . . . a division of this application was finally rejected by the Commissioner 25 years later. Meantime the original patent had been issued after a delay of some fifteen years, with claims which purported to cover every automobile having a gasoline engine and a steering gear. By reason of this long delay, when the patent issued, it purported to cover a thriving industry, already grown to large proportions.[5]

On November 5, 1895, Selden received his patent (No. 549160) and in 1899 he issued an exclusive license to the Electric Vehicle Company.[6] Meanwhile, of course, automotive manufacture had already begun and a relatively large number of automobile producers were turning out those strange vehicles which we regard today as neolithic prototypes, slightly comical and awkwardly ornate, of the modern streamlined car. The Electric Vehicle Company announced that the so-called basic Selden patent would be enforced, and in 1900 brought suit against the Winton Motor Carriage Company.[7] The Winton Company in demurrer asserted the invalidity of the Selden patent as a combination of known and existing elements. This was overruled and the litigation continued. After three years of inconclusive legal jousting the case was settled by consent decree before decision but after testi-

[4] R. C. EPSTEIN, THE AUTOMOTIVE INDUSTRY 227 (1928).

[5] Testimony of Willis Rice, in *Hearings before the Committee on Patents on H. R. 4523*, 74th Cong., 1st Sess. 545 (1935).

[6] WALTON H. HAMILTON, PATENTS AND FREE ENTERPRISE 116 (TNEC Monograph 31, 1941).

[7] Electric Vehicle Co. v. Winton Motor Carriage Co., 104 Fed. 814 (S.D. N.Y. 1900).

mony was taken.[8] The Winton Company acknowledged the validity of the Selden patent and acquired a license to manufacture under it. It has been maintained that much significance attaches to the conditions of settlement, which rebated to the defendant a substantial sum of money, gave to his counsel a permanent annual retainer, and suppressed evidence and exhibits taken in the case, so that they were not available to other potential litigants.[9] Moreover, according to some versions it was a casual remark by the district judge to the effect that a patent might be broad enough to cover the entire industry "which led the entire industry to fall all over itself to enter into a licensing agreement with Selden."[10]

In March, 1903, the Electric Vehicle Company and eighteen other manufacturers formed the Association of Licensed Automobile Manufacturers. Thirteen other concerns had already been licensed and the Association undertook its protracted effort to enforce the claims of the Selden patent against non-members, dealers, and customers of non-members.[11]

Under the license agreement each manufacturer paid to the Association a royalty of 1¼ per cent of the catalog or retail price of all vehicles sold. Of this total royalty three-fifths was retained by the Electric Vehicle Company and the other two-fifths placed in the Association treasury, primarily for legal expenses incurred in the enforcement of the patent. One of the conditions on which the licensees respected the patent was that as a group, *i.e.*, through the committee of the Association, they would be allowed to determine to what new concerns the Electric Vehicle Company would issue licenses.

The independents formed their own rival association, the American Motor Car Manufacturers Association, to defend its members against the renewal of the campaign to force all of the manufacturers either into the ALAM or out of the industry. Litigation was practically continuous, and much attention has been drawn in later accounts of the period to the publicity pressure which the ALAM sought to exert upon consumers as well as upon manufacturers and dealers. The Association's famous warning, "Don't buy a lawsuit with your automobile," has been frequently cited in discussion of the intent of the Association to control all facets of the market.

The most spectacular effort of the Association involved, of course, the litigation with Henry Ford. Ford applied for a license and was refused. ALAM members alleged that Ford was not in fact a manufacturer of automobiles but merely an assembler, and should therefore be barred from the industry.[12] Edsel Ford, in his testimony before the TNEC, said:

[8] WILLIS B. RICE, A CONSTRUCTIVE PATENT LAW (N. Y. U. L. Q. REV. Contemporary Law Pamphlet, Series I, No. 12, 3 (1939)).

[9] *Ibid.*

[10] *Hearings* cited *supra*, note 5, Part I, 556.

[11] HAMILTON, *op. cit. supra*, note 6, at 116, 117.

[12] E. D. KENNEDY, THE AUTOMOBILE INDUSTRY 45 (1941).

My father inquired of one of the officers of the association if it were possible to join . . . and become a member as the other motorcar companies were. He was told, I understand, he had best go out and manufacture some motor cars and gain a reputation and prove that he was not a fly-by-night producer before he should ask for a membership . . . .[13]

Ford continued to manufacture and in October 1903 was sued by the Electric Vehicle Company.[14] After "probably the most exhaustive legal and technical consideration of the details of any letters patent which has ever been undertaken," a decision was rendered in September 1909 upholding Selden's patent.[15] Judge Hough of the Federal Court for the Southern District of New York in his decision said,

No litigation closely resembling these cases has been shown to the court, and no instance is known to me of an idea being buried in the Patent Office until the world caught up with it and passed it and then embodied in a patent useful only for tribute. But patents are granted for inventions. The inventor may use his discovery, or he may not; but no one else can use it for 17 years. That 17 years begins whenever the United States so decrees by its patent grant. That the applicant for patent rights acquiesces in delay, or even desires delay, is immaterial to the courts, so long as the statute law is not violated. On these principles complainants are entitled to a decree.[16]

This decision was, of course, a sweeping victory for the Licensed Association and an equally crushing reversal for the independents, so that at the beginning of 1911 the only holdouts were Ford and Thomas B. Jeffery. Ford appealed with results which have become in the light of later events historic vindication of an obduracy which in itself has been considered to be one of the principal competitive forces in the subsequent annals of automobile manufacture.

On January 9, 1911, the Circuit Court of Appeals reversed the decision below, holding that the Selden patent, though valid, was restricted to the particular type of engine shown, that Ford construction did not infringe, and that in effect the patent did not blanket the industry.[17] It is interesting to note that in commenting upon the element of delay, Judge Noyes stated,

This patent was applied for in 1879 and granted in 1895. For over 16 years the application lay in the Patent Office and the applicant took full advantage of the periods of inactivity permitted by the rules and statutes. It is apparent that he delayed just as long as possible the issue of the patent to him. During this long time the automobile art made marked advances along different lines and when, in 1895, the patent was granted, it disclosed nothing new. Others had then made the patentee's discovery and had reduced it to practice in ignorance of what he had done. While he withheld his patent, the public learned from independent inventors all that it could teach. For the monopoly granted by his patent he had nothing to offer in return. The public gained absolutely nothing from his invention, whatever it was. From the point of view of public interest it were even better that the patent had never been granted. . . . But the patentee acted wholly within

[13] *Hearings before the TNEC*, Part 2, 75th Cong., 3d Sess. 268 (1938).
[14] Electric Vehicle Co. v. C. A. Duerr & Co., 172 Fed. 923 (S.D. N.Y. 1909).
[15] EPSTEIN, THE AUTOMOBILE INDUSTRY 229, 230 (1928).
[16] Electric Vehicle Co. v. C. A. Duerr & Co., 172 Fed. 923, 937 (S.D. N.Y. 1909).
[17] Columbia Motor Car Co. v. C. A. Duerr & Co., 184 Fed. 893 (C. C. A. 2d 1911).

his rights. He merely took advantage of the delays which the law permitted him. . . . This patent, even if it be useful only for tribute, must be viewed without prejudice and with absolute judicial impartiality.[18]

This was, of course, a decision of major industrial importance, for if neither Ford nor the licensees for that matter were to be subject to the Selden patent the industry was in reality thrown open to all comers. To the last Selden held that the fruit of his perspicacity, if not indeed of his inventive ability, had been harshly taken away by the decision of the higher court.[19]

It is perhaps worth noting that numerous observers have sought to spell out the significance of the 1911 decision. Estimates of the amount of royalties which were collected from the industry vary from $5,800,000[20] to $10,000,000.[21] During the years from 1903 to 1911 royalties were paid upon percentages of total production varying from seventy percent in 1903 to about fifty percent in 1908 (when the tempo of litigation obviated any immediate threat to a non-licensed maker) to 100 percent of the total in 1910 and 1911 (exclusive of Ford). Many differently situated observers have drawn portraits of the potential significance of the Selden patent and the ALAM to the industry, had the Court of Appeals sustained the original decision. Thus, for example, Henry Wallace has stated:

> What the status of the automobile industry would be today if this combination had been allowed to restrict its growth, one cannot say. However, one can visualize the probability that the automobile might have remained a luxury commodity for many more years than it actually did, and that the system of belt-line and mass production which has proved such a benefit to people in the lower-income brackets might have been long delayed.
>
> Highways, flat glass, rubber, steel, gasoline and all those other commodities depending upon the advancement of the automobile industry would have suffered considerably. The existence of gas stations and broad highways throughout the country is a tribute to an automobile industry built on price-and-quality competition, a condition which was competely frustrated as long as the Association of Licensed Automobile Manufacturers was able to use its accumulated power as a weapon in the ordinary market place.
>
> The destruction of the automobile patent pool gave the American public at least twenty-five years of fruitful competition. . . .[22]

Much this same view is expressed by Rice, who says:

> If this litigation had been decided differently or if the Court of Appeals had agreed with the lower court, there is reason to believe that it would have kept out of the industry permanently the man who brought mass production to the automobile field and made automobiles available to the man in the street.
>
> . . .
>
> If the Selden patent had been sustained it would have brought the entire industry for many years under monopolistic control of a patent owner who had in fact played only

[18] *Id.* at 894, 895.

[19] KENNEDY, THE AUTOMOBILE INDUSTRY 47 (1941).

[20] EPSTEIN, THE AUTOMOBILE INDUSTRY 232 (1928).

[21] *Hearings before the Committee on Patents on H. R. 4523*, Part 1, 74th Cong., 1st Sess. 555, 556 (1935).

[22] Wallace, *We Must Save Free Enterprise*, THE SATURDAY EVENING POST, Oct. 23, 1943, p. 13 *et seq.*

the part, economically speaking, of a highwayman although we do not mean to suggest moral obliquity. Under our law a patentee has a right to do just that thing. The effort failed in the Selden case only because the court held that his patent was faultily drawn.[23]

In modern parlance, there would be no hesitancy in recognizing the ALAM as a paten. cartel, having most of the customary attributes of the species. It has been said, however, that "the influence of the Selden association upon the development of the industry, although most important from the point of view of standardization and technical research, was neither so dominant nor so oppressive upon the purely commercial side of things as might perhaps be imagined. . . ."[24] There is apparently dispute over the question whether the Association attempted to set figures for the production of cars.[25] There would, however, not seem to be much question that many of the early manufacturers did consider the automobile a luxury product and that it was Ford's social invention of the automobile as a mass carrier, cheaply manufactured, which transformed the industry from one which catered primarily to conspicuous consumption to one which motorized a nation.[26] Once released from the legal oubliette into which it might have otherwise been confined under the Selden patent, the industry took its character not so much from the contours of a system of patent control as from those of the broad economic environment into which it merged.

Following the 1911 decision which removed the hegemony of the ALAM from the industry the Association was dissolved, to be followed shortly by the formation of the Automobile Board of Trade and then, in 1913, by the Automobile Chamber of Commerce. Quite separately the Society of Automotive Engineers continued the technical research functions which had been carried on by a branch of the original association. From the standpoint of competition the National Automobile Chamber of Commerce altered competitive relations of automobile manufacturers in the same way that many other industrial trade associations have done. In addition to fulfilling these trade association functions, however, it was the National Chamber of Commerce which inaugurated the famous cross-licensing policy which has continued to represent the prevailing patent policy of much of the automobile industry. As the representative of the Patent Department of the present Automobile Manufacturers Association stated, if the patent pool was not the essential *raison d'etre* for the formation of the new association, it was at least a major consideration:

> This [the 1911 decision] meant that the defendants did not infringe and the destruction of the plan upon which the Association of licensees was built.
>
> Of course the group reorganized themselves immediately on different lines in order to continue the benefits of mutual association.

[23] WILLIS B. RICE, A CONSTRUCTIVE PATENT LAW (N. Y. U. L. Q. REV. Contemporary Law Pamphlet, Series I, No. 12, 4-5 (1939)).

[24] EPSTEIN, *op. cit. supra*, note 20, at 231, 232.

[25] *Cf.* EPSTEIN, *op. cit. supra*, note 20, at 232 *et seq.*

[26] See Mark Adams, *The Automobile—A Luxury Becomes a Necessity*, in WALTON HAMILTON AND ASSOCIATES, PRICE AND PRICE POLICY 27-81 (1938); Seltzer, *Automobile Industry*, 2 ENCYC. SOC. SCI. 324 (1930).

Our present association is a direct descendant of this early one. . . .[27]

The roster of members of the Association has risen and fallen since 1913 in correspondence to the rise and decline of the numbers of automotive manufacturers. In 1913 there were sixty-three members; in 1922 there were 131 members; in 1938 membership had fallen to thirty-one manufacturers.[28]

In 1939 all manufacturers of passenger vehicles in the United States with the exception of Ford and Lincoln (which was at one time a member), the American Bantam Car Company, and "some small companies not actually manufacturing" belonged to the AMA.[29] There are "numerous motor truck manufacturers who are not members" but those who are members control considerably more than half of total truck production.[30]

The most important inquiry into the patent policies existing in the automobile manufacturing industry and the effects of such policies upon competition is that which was conducted by the Temporary National Economic Committee.[31] The testimony and analysis covered research, patents, licensing, and litigation policies with respect to patents. Three separate "systems" or variations in attitudes and policies toward patents were distinguished by the inquiry—that of Ford, that of Packard, and that of the AMA.[32] It is in the interplay of these three major types of policies that the effect of patents on the conduct of automobile manufacturers has been determined, if for the moment consideration is omitted of policies in the immediately adjacent fields of supply, or in the broader network of industrial operations in which patent practices necessarily impinge or even collide head-on at some points with the nucleus of practices in the automobile industry proper.

The patent policy which is most clearly motivated by what may be called an "instinct of competition" is that which has been pursued by the Ford Motor Company.[33] According to the testimony of the representatives of the Ford Company before the TNEC, the company's primary reason for taking out patents is protection against possible infringement suits. Once the patent has been acquired, however, it is Ford practice to grant a license under the patent to anyone who asks for it, without royalty. It was testified that in only one instance has the Ford Company

[27] FEDERAL TRADE COMMISSION, REPORT ON MOTOR VEHICLE INDUSTRY, H. R. Doc. No. 468, 76th Cong., 1st Sess. 44 (1939). There have been several changes in the name of the Association. In October, 1934, the board of directors ordered the adoption of the present name, the Automobile Manufacturers Association, Inc.

[28] Duplications have been eliminated in the listing of members, as, for instance, where some members manufacture more than one kind of vehicle. The distribution of membership in 1938 consisted of seventeen passenger car manufacturers, nineteen truck manufacturers, nine bus manufacturers, two taxi manufacturers, three ambulance manufacturers, and four manufacturers each of motor fire apparatus and trailers. Members of the AMA are separate manufacturing companies or separate manufacturing divisions of companies producing more than one type of vehicle, *e.g.*, each of the divisions of General Motors and Chrysler is a separate member.

[29] FEDERAL TRADE COMMISSION, REPORT ON MOTOR VEHICLE INDUSTRY, cited *supra* note 27, at 46.

[30] *Ibid.*

[31] *Hearings before the TNEC*, Parts 2, 25, 75th Cong., 3d Sess. (1938).

[32] *Id.*, Part 2, 312.

[33] WALTON H. HAMILTON, PATENTS AND FREE ENTERPRISE 121 (TNEC Monograph 31, 1941).

ever collected royalties. Where Ford patents, or inventions covered by Ford patents, are used without the authority of a license, it has not been Ford policy to sue for infringement. In fact, in only one instance, in 1909, was an infringement suit started; since that time there have been no suits for patent infringement in which Ford has been a plantiff. All told, Ford has granted licenses under ninety-two patents and has taken licenses under 515 patents owned by others. In none of these cases, however, have royalties been given or received.

Although Ford has refrained from suits for infringement against others, it has not itself escaped patent litigation. In the period from 1926 to 1938 a total of 346 threats of suit for infringement were received. Of this total, sixty suits reached court, but in only one case was an action lost and decided against Ford in a court of last resort. According to the testimony of Ford's patent attorney, 95 per cent of the actions brought against the Ford Company have been instituted by holders of patents who were not engaged in manufacturing, and the implication is stressed that the company, in consonance with its general point of view, has regarded such patents as "paper patents."[34]

It is, of course, extraordinarily difficult to place a categorical value upon any of the patents held by the Ford Company; but it is not necessary to do so in order to draw the conclusion that the Ford patent policy has in itself been a definite competitive factor in the industry. The mere existence of so redoubtable an intransigent would tend to make it difficult, if not impossible, for any other group in the industry to create a patent structure capable of dominating automobile technology. Moreover, the existence of such a heterodox position on patents, in addition to obviating the likelihood of their use as power weapons in the industry, has apparently not impeded technical development and progress in the field.[35]

There is some evidence, however, that other members of the industry regard the Ford system as an idiosyncrasy made possible by the relative unimportance of many of the Ford patents, or a utopian practice not generally applicable.[36] Nevertheless, the Ford patent policy constitutes a persistent interrogation to the industry at large which cannot, in view of the role which the company has played in the development of the product and the market, be lightly dismissed as a peculiar deviation of industrial dissent.

The second principal policy with respect to patents in the automobile industry is embodied in the cross-licensing agreement administered by the Automobile Manufacturers Association. Whether it is considered to be the outcome of early experience transforming necessity into virtue or whether it is regarded as a prime manifestation of enlightenment dispelling shadows over the future, the cross-licensing agreement has long been considered a paragon among patent pools. It may be trans-

[34] See the comment on infringement litigation in the automobile industry in W. B. BENNETT, THE AMERICAN PATENT SYSTEM 105-108 (1943).

[35] Compare the testimony of Edsel Ford and I. J. Farley in *Hearings before the TNEC*, Part 2, 75th Cong., 3d Sess. 272 *et seq.* (1938). See also HAMILTON, *op. cit. supra*, note 33, at 118.

[36] *Hearings before the TNEC*, Part 2, 75th Cong., 3d Sess. 299-303, 312-313 (1938).

lucent because it is relatively shallow in depth, but there would seem to be little question that, in contrast to the character of patent pools which have been encountered in other industries such as the chemical, electronic, and communications fields, the automobile patent pool reflects a serene tranquillity on its members.

The first cross-licensing agreement was executed in 1915 and extended to 1925. In effect, the cross-licensing agreement to which nearly all members of the Association subscribed was simply a reciprocal interchange of patents among the parties obviating the payment of royalty by one member to another. Since that time there have been a number of subsequent extensions for shorter periods. When the 1935 agreement expired in 1940, temporary renewals were made to give an opportunity for reevaluation of the patent position of the industry.[37] The most recent extension of the cross-licensing agreement, entered upon in the spring of 1947, does not seem, however, to represent any substantial alteration of the general provisions of previous agreements.

The initial cross-licensing agreement included 547 patents of 136 companies.[38] It applied to all patents which were owned at the time of the execution of the agreement and to all patents acquired during the life of the agreement. Provision was made for the exception of what were called Class B patents from the pool. A Class B patent, interestingly enough, was defined "as an extraordinary patent of a revolutionary character."[39] Only one attempt was ever made to have a patent classified in this category. The application was submitted to arbitration by an independent board after the Patent Committee of the Association had rejected the claim, and the arbitrators voted unanimously that the patent in question did not constitute a revolutionary departure from the existing art.[40] The agreement did not include patents of parts manufacturers, patents that were "strictly applicable to trucks, fire engines, tractors, [or] hoisting devices," or so-called design patents which were held to identify the product of a particular manufacturer.

The 1925 extension applied only to patents held at that date, so that no patents thereafter acquired in the life of the agreement were subject to cross-licensing. This provision eliminated the necessity for anticipating the possible development of Class B patents. Similarly, the 1930 extension applied only to patents held at that date, and the 1935 extension also was based upon patents in the field as of 1930. Some idea of the plateau in numbers of patents during this period is given in the comparative figures: in 1925 there were 1066 patents in the pool, in 1930 there were 1687, in 1935 there were 1285, and in 1938 there were 1058 subject to agreement.[41] The 1947 extension covers patents owned as of January 1, 1940.

As the older patents have expired there has been a corresponding decline in the

[37] L. I. WOOD, PATENTS AND ANTITRUST LAW 145, 146 (1942).

[38] The list of charter members of the Association which was placed on file with the TNEC gives 136 member companies including subsidiaries. *Cf.* Wood, *op. cit. supra,* note 37, at 145.

[39] *Hearings before the TNEC,* Part 2, 75th Cong., 3d Sess. 288 (1938).

[40] *Ibid.*

[41] *Id.* at 292.

importance of the cross-licensing agreement. At the time of the TNEC hearings the witness for the Association conceded that the patents then in the pool were not of great value and "not as important as the patents that were in the early part of the industry."[42] Hence it may be concluded that the pool itself, containing for the most part innocuous or obsolescent patents, has come to be more of a symbol than an operative factor in the development of the industry.

That the cross-licensing agreement has held patent litigation in the industry to a minimum may be freely conceded. The most important characteristic of the agreement from the standpoint of patent competition is that in the phase of development, at least subsequent to the Selden episode, the agreement constituted "a complete abrogation of the patent law" with respect to the industry and the substitution of "a different system not provided by the patent law."[43] The problem of producers in "seeking within the law, though not through the law, to attain a technologically desirable end" has in effect "altered our patent law system without the formality of statutory amendment."[44] These considerations, however, clearly apply more directly to the formative period of the industry than to its more mature phases, so that "today the practice is in general that of licensing use of inventions in return for royalties."[45] It must, of course, be added that, while it is apparently expected that having reached its present state future progress in the industry will tend to be specific rather than revolutionary in nature, it would seem likely that future cross-licensing agreements of the AMA will probably embody more "psychical or spiritual"[46] cooperation than basic technical relationships. At the same time the whole field of technology is in flux today, and it is conceivable that revolutionary developments may occur. What policy would be adopted by the Association under such circumstances is indeterminable.

The most prominent dissent from the patent policy of the AMA by a member of the Association is that of the Packard Company. This company has never entered into the cross-licensing agreement because it believes that its own patents possess unique value. It had issued at the time of the TNEC hearings a total of 197 licenses and had taken licenses under 176 patents held by others. Generally the Packard policy had been to receive royalties on licenses, with a few exceptions, and upon occasion to restrict licensees as to field of use but not as to quantity of production nor price.[47] As the Federal Trade Commission pointed out, there has been some tendency for other firms, such as General Motors, to adopt policies toward recent developments which in effect resemble those of Packard, even though they subscribe to the cross-licensing agreement.

[42] *Id.* at 295.
[43] Testimony of Willis Rice, *Hearings before the Committee on Patents on H. R. 4523*, Part 1, 74th Cong., 1st Sess. 558 (1935).
[44] L. I. WOOD, PATENTS AND ANTITRUST LAW 100, 98 (1942).
[45] *Id.* at 147.
[46] *Cf. Hearings before the TNEC*, Part 2, 75th Cong., 3d Sess. 295 (1938).
[47] *Id.* at 304-313.

There are, however, still other coordinates which it is necessary to include in the patent equation in the automobile industry. It has been estimated that one-fifth of all applications for patents have to do with the automobile.[48] In 1940, there were some 175,000 live automotive patents. Even though quietude prevailed on the surface of the automobile industry in consequence of the relative liberalism and even distrust of patents which has distinguished car manufacturers, it is obvious that such numbers of claims cannot move wholly in unison without friction. The question arises whether other, stronger forces now lubricate the flow of patents in the industry and whether the stoppages that do occur, even though they may be small in number, do not indicate a state of tension rather than a state of complete patent equilibrium.[49]

It is particularly interesting that "patent competition" is keenest among parts manufacturers. But parts manufacturers are an integral part of the industry, even when they are not integrated subsidiaries of the major automobile makers. There have been at times some indications that newcomers or would-be entrants into parts manufacture encounter practices which can hardly be said to accord with the general reasonableness which the industry has perforce displayed since 1915.[50] As might be expected, there is a greater frequency of patent litigation in the parts field. Some of the reasons for the contests which have occurred in this field are found in the increasing importance of the parts business and perhaps also in the tendency toward concentration both in parts and automobile production, as well as in the volume of research which some of the larger concerns conduct and in the nature of some of the patents which have been developed.[51] Moreover, parts manufacturers take the position that pooling of the type incorporated in the AMA agreement is inapplicable to them. For instance, the official representative of the Automotive Parts and Equipment Manufacturers Association, in testimony before the TNEC, endeavored to accentuate the risk position and the need for patent independence of parts manufacturers, emphasizing that the purchasing agent of an automobile company "has competition . . . offered him on every single part that he wants to buy," and that in effect anything like a market monopoly based on patents in parts is an improbable, if not impossible, contingency.[52]

Short of an invention rendering the automobile as we know it obsolete, such as the

[48] WALTON H. HAMILTON, PATENTS AND FREE ENTERPRISE 115 (TNEC Monograph 31, 1941).

[49] See HAMILTON, *op. cit. supra*, note 48, at 115.

[50] Compare, for example, the testimony concerning patent infringement litigation given in *Hearings before the TNEC*, Part 3, 75th Cong., 3d Sess. 938-947 (1938).

[51] Compare upon this point Hamilton's remarks concerning the Delco patents and the memoranda submitted by the patent counsel of General Motors to the TNEC. *Hearings before the TNEC*, Part 2, 75th Cong., 3d Sess. Exhibits 104, 105, Appendix 691, 697 (1938).

[52] See the testimony of Clarence C. Carlton, *Hearings before the TNEC*, Part 3, 75th Cong., 3d Sess. 1045, 1053, 1055, 1057, 1058 (1938). Parts manufacturers do, of course, cross-license and license, generally upon a non-exclusive basis. In some cases royalties are paid; in others not, depending upon the bargaining positions of the parties. It may be said, however, that monopoly situations in adjacent fields can sometimes produce litigation which bears directly upon the automobile industry itself, as for instance the litigation stemming from the development of aluminum pistons. The series of patent cases following the establishment of the Piston Trust Estate illustrates that a monopoly situation in one sector of industry can ramify via patents into the patent structure of an entirely separate industry.

development of jet-propelled vehicles or automobiles using atomic energy, it is apparent that the web of automotive technology is so far-flung and is already in the public domain to such an extent that there is only a remote possibility that any individual or group could command enough of the patent strands in the network to control the industry today. Moreover, even in those sectors in which there is some evidence of an increasing disposition upon the part of the major manufacturers to create a patent structure capable of dominating one or more segments of the industry, any effort to pursue tactics of patent aggression would be likely to precipitate a titanic field day of costly litigation. Such litigation would not only injure the industry publicly, but might well have untoward results for both the patent system and other industries as well. Only a Pyrrhic victory could ensue. It is especially interesting to note, from this standpoint, that postwar newcomers to the industry have not, so far as has been publicly acknowledged at least, encountered any difficulties of access patent-wise. Other shortages have been, so far as is known, the principal obstacles met by new entrants such as Kaiser-Frazer.[53]

From another standpoint also, it is possible to ask whether the principal types of patent abuse are frequently encountered in the automotive art. With few exceptions, the practices associated with misuse of patents in other fields, such as restrictions on territory, limitations on output, harassing litigation, narrow restrictions on use, tying-in clauses, and price fixing, have not constituted a primary means of control nor a problem to the general maintenance of competition within the industry. Some of the most astute and caustic critics of patent abuse have bestowed an accolade of approval on this aspect of the industry as a whole. Walton Hamilton has said, for example, "It is hard to think of a form of cooperation between competitors which has brought as much benefit to the public as the cross-licensing agreement with respect to the automobile."[54] Under the patent policies which have prevailed in the industry, competition is technically marginal. In other words, while the open pool and the patent liberalism of non-members of the pool have in effect been *pro tanto* reformations of the patent law, economically the partial nullification of the patent monopoly has set the stage for greater competition in the manufacture of the patented article.[55] In this sense, the entire patent policy of the automotive industry can be spoken of as a pooling operation and stands in dazzling contrast to the man-

[53] It may be noted that the Kaiser-Frazer group, by virtue of the latter's control of the Graham-Paige organization, is in effect a party to the cross-licensing agreement.

[54] WALTON H. HAMILTON, PATENTS AND FREE ENTERPRISE 122 (TNEC Monograph 31, 1941).

[55] It is interesting to note that, despite the efficacy of the patent policies in the automobile industry in reducing litigation and making possible the scale of manufacture which exists in this country, prominent critics have pointed out that some of the very important advances in the automobile have come in Europe before they have appeared in America. The implication is that stricter patent policies would spur significant advances here. See the testimony of Dr. Vannevar Bush, *Hearings before the TNEC*, Part 3, 75th Cong., 3d Sess. 889 (1938). In opposition to this position, however, is that taken by Kirsh, who says: "It has been demonstrated by the recorded experience in the automobile industry that such agreements give an impetus to further invention." B. S. Kirsh, *Patent Pools and Cross-Licensing Agreements*, 20 J. PAT. OFF. SOC'Y 733, 744 (1938).

ner in which closed pools have magnified rather than mitigated abuses in other fields.[56]

There have been, of course, attempts—sometimes ludicrous—to apply a single patent lever upon the fulcrum of this or that sensitive point in the industry to compel the acceptance of licenses.[57] There are apparently some grounds also for recognizing that many of the patents in the automobile industry on ostensible modifications and improvements have far more tactical importance as devices for enhancing market appeal than genuine technical merit. What may be a jabberwock or a "widget"[58] from an engineering point of view (*i.e.*, a more or less ornate device representing no genuine technogical advancement but designed to impress the lay consumer) can be employed as a market lure, for, despite the very high degree of technical sophistication upon the part of the public (or perhaps because of it), a minor gadget or unimportant contrivance can assume disproportionate importance in consumer choice. Nor can it be denied that what technologists have referred to as "the new illiteracy" makes possible a certain amount of "selling the sizzle rather than the steak."[59]

Within the internal structure of the industry, however, there are some rather crucial questions which may well be decided within the next few years concerning the depth and reality of competition among automobile manufacturers as well as among parts manufacturers. The automobile industry has happily not had the cartelization experience of some of the large industries which surround and supply automobile manufacture, such as, for example, rubber, petroleum, glass, plastics, chemicals, and metals. Nevertheless, merger, combination, and shifts in the balance of power within the industry during the depression years and through World War II have given disturbing suggestions of a much tighter monopoly development, partly in accordance with the trends which have lessened competition in other fields and partly in consequence of increasing concentration and size of major units within the industry. Even if the current situation is discounted, price inflexibility bespeaks the lessening of competition.[60] In this connection it should perhaps be remarked that the Federal Trade Commission contends that active price competition has existed in the lower-priced group largely because "Ford has never been a member of the powerful motor-vehicle manufacturers' trade group . . . or its predecessor organizations, but followed an independent course with respect to production, price and sales policies."[61]

[56] *Cf.* C. A. Welsh, Economic Significance of Patent Pools and Cross-Licensing Agreements, in *Hearings before the Committee on Patents on H. R. 4523*, Part 1, 74th Cong., 1st Sess. 2250, 1151 (1935).

[57] *Cf.* the testimony concerning radiator thermometer patents, *id.* at 571-572, 584-585.

[58] Fortune, March, 1946, p. 233.

[59] See the testimony on this point in *Hearings before the Committee on Patents on H. R. 4523*, Part 1, 74th Cong., 1st Sess. 940-941; and Mark Adams, *The Automobile Industry—A Luxury Becomes a Necessity*, in WALTON HAMILTON AND ASSOCIATES, PRICE AND PRICE POLICY 47 (1938).

[60] *Cf.* CLAIR WILCOX, COMPETITION AND MONOPOLY IN AMERICAN INDUSTRY 196, 197 (TNEC Monograph 21, 1940).

[61] FEDERAL TRADE COMMISSION, REPORT ON MOTOR VEHICLE INDUSTRY, H. R. Doc. No. 468, 76th Cong., 1st Sess. 32-33 (1939).

The appearance of new producers in the postwar period is, however, a sign that the industry still retains a basic area of competition and that it has not yet evolved to a point at which there is any permanent threat to the competitive mainsprings of automotive manufacture—even though as much cannot be said for some policies which have arisen from time to time in the control of the supply of parts.

It must be recognized that the industry is not entirely autonomous either in respect of product competition or the maintenance of patent policies which facilitate, or at least do not impede, market rivalry. One of the foremost authorities on research in the automobile industry has pointed out, although in a different context, that "each one of the industries which served the automobile field before the war has a long and detailed patent history of its own which has just as much effect as if it were part of the automobile industry."[62] Hypothetically at least, it is conceivable that the whole policy of the industry could be altered, not so much by a revolutionary development within itself, or even by the increasing tendency which has been noted for integrated control by a single member, especially over parts, to orient the industry further toward monopoly, but rather by the appearance of a radical development in a tangential field, such as fuel, where patent policies may be guided by a cartel philosophy. The coefficient of probability attaching to such an event may be small, but it can never be reduced to zero.[63]

There are undoubtedly many steps that could be taken to achieve even better results than those which men, circumstances, technology, and the law have evolved thus far. Walton Hamilton has attempted to visualize abstractly an ideal system for the industry under which free access to all technology in both automotive manufacture and parts manufacture would remove any threat of the resurgence of monopoly based on patents.[64] Admittedly, however, such a solution does not at the moment seem feasible. There is some hazard that in the process of the fusion of technology and patents it tends to be the existing small manufacturer and the potential newcomer who are placed at a bargaining disadvantage, should the trading philosophy of the industry become more inflexible either as the rate of technological change declines or as the market approaches saturation. Neither of these conditions yet exists, but experience in other industries has illustrated the danger.

What conclusions emerge? The entire complex of patent practices in the automobile industry is a challenge to that interpretation of the patent system so often advanced in other fields in justification of demonstrable abuse of patents, such as that involved in cartel arrangements, that any such live-and-let-live attitude toward patents is a hindrance to progress or the removal of an incentive to produce. The automobile industry is not a unique exception which proves the rule, but rather

[62] Dr. C. F. Kettering, *Role of Patents in the Automobile Industry's Growth*, THE JOURNAL OF COMMERCE, March 11, 1943, §2, p. 11, col. 2.

[63] Dr. Kettering has stated, "The most important single problem the industry has is the question of fuels." *Hearings before the TNEC*, Part 30, 75th Cong., 3d Sess. 16295 (1938).

[64] WALTON H. HAMILTON, PATENTS AND FREE ENTERPRISE 120-121 (TNEC Monograph 31, 1941).

an unanswerable deliverance of experience which contradicts the thesis that without monopolistic patent structures industrial advancement cannot occur.

By and large, it may be said that in an industry where the consumer is still an *arbiter elegantiarum,* and ultimately of success or failure, patents are a necessary but not a sufficient condition of industrial primacy. In the automobile industry as in other fields, the thrust of economic development has for some time past abetted concentration rather than competition. There are valid reasons for believing that while the industry still passes the basic test of competition, *i.e.,* access to the market by newcomers is possible, there is a strong collocation of forces within and without the industry tending once more, as in the industry's infancy, to bring about an unhealthy domination of the market. Should these elements increase rather than decrease in the years ahead, one of the basic spheres of competition in the economy would be placed in jeopardy.

Both the industry and the public have much at stake in this question, for any final termination of competition in the automobile industry would be a profound shock to the competitive structure everywhere. This potentiality can be mitigated, if not completely held in check, by factors which are also acting upon the industrial scene, such as the enforcement of antitrust laws, the breadth and scope of automotive technology, and the allure which the industry has for newcomers. Withal, it can still be said that while monopoly in the automobile industry cannot be achieved without patent control, it has not been and is not likely to be achieved by means of patents. Neither the state of the arts nor the climate of opinion would readily tolerate such a condition.

THE RELATION OF PATENTS TO THE ANTITRUST LAWS

GEORGE E. FOLK*

Is there a clash of principles between the United States patent system, which grants an unconditional monopoly of an invention, and the system of free competitive enterprise, which it is a policy of the antitrust laws to uphold? I believe there is not.

There should be no special difficulty in reconciling our patent laws with our antitrust laws. The courts have readily defined their respective spheres by "recognizing the nature of the property dealt in."[1] While private ownership of property, including patent property, is essentially a limitation of the activities of others, it is also true that under our system of free enterprise private ownership and complete control of the property involved not only promote free enterprise but are essential to it.

It is not the ownership or control of property—the monopoly thereof—whether it be patents or other property rights, that the antitrust laws are aimed at, but at abuses of those rights. Free enterprise does not mean that anyone should be free to conduct an enterprise with another's property without the other's permission.

Whenever a person enters into a contract which covers something beyond the rights inherent in the patent grant, the transaction, of course, is subject to the general law and the patent affords no immunity.

THE OBJECTIVES OF THE ANTITRUST ACT

The Sherman Antitrust Law was enacted in 1890[2] and has for its objective a curb, beyond that of the common law, upon monopolies resulting in unreasonable restraint of interstate and foreign trade. The ownership and control of any kind of property is a monopoly of that property, whether it be real estate or personal property —whether, for example, it be the ownership of lands resulting from land grants by the Government or whether it be patentable inventions covered by a patent.

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[1] Bement v. National Harrow Co., 186 U. S. 70 (1902); United States v. General Electric Co., 272 U. S. 476 (1926).

[2] 26 STAT. 209 (1890), as amended, 15 U. S. C. §§1-7 (1940).

OBJECTIVES OF THE PATENT LAWS

In the Constitution our forefathers provided for the development of our geographical frontiers by providing that "the Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States . . ."[3] Exercising this power, Congress passed laws by which land patents were granted.[4] Such a land patent vested title to the land *in perpetuity* in the grantee. At the same time, in order to encourage the discovery and development of scientific frontiers, our forefathers provided in the Constitution that Congress should have power to "promote the progress of science and useful arts, by securing for limited times to . . . inventors the exclusive right to their . . . discoveries."[5]

Thus a land patent grants a property right (a monopoly) in perpetuity, while a patent for an invention grants a property right (a monopoly) for a limited time only —at first for fourteen, now for seventeen years.

The Supreme Court has repeatedly held, to quote the exact words in one instance, that "a patent for an invention is as much property as a patent for land. The right rests upon the same foundation, and is surrounded and protected by the same sanctions."[6]

A patent, therefore, is a monopoly in the same sense that the ownership and control of any property is a monopoly. There was no occasion in the antitrust laws to specify patents as an exception to the application of those laws. There is no reason for assuming that patents are an exception. However, at times the courts have made such statements as: ". . . a patent is an exception to the general rule against monopolies and to the right to access to a free and open market."[7]

THE "RULE OF REASON"

Obviously, a literal application of the language of the Sherman Act would seriously hamper interstate and foreign trade. Therefore, the Supreme Court has applied "the rule of reason" in interpreting the statute; *i.e.*, it inquires whether the restraint of trade is reasonable or unreasonable. Even before the rule of reason was used as a guide, the Supreme Court had held that the Sherman Act "clearly does not refer to that kind of restraint of interstate commerce which may arise from reasonable and legal conditions imposed upon the assignee or licensee of a patent by the owner thereof, restricting the terms upon which the article may be used and the price to be demanded therefor."[8]

[3] U. S. CONST. Art. IV, §3(2).

[4] REV. STAT. §453 (1875), 43 U. S. C. §2 (1940).

[5] U. S. CONST. Art. I, §8(8).

[6] Consolidated Fruit Jar Co. v. Wright, 94 U. S. 92, 96 (1876). See also James v. Campbell, 104 U. S. 356 (1881); United States v. Dubilier Condenser Corp., 289 U. S. 178 (1933); and Hartford-Empire Co. v. United States, 323 U. S. 386 (1945).

[7] Precision Instrument Mfg. Co. v. Automotive Maintenance Machinery Co., 324 U. S. 806, 816 (1945).

[8] Bement v. National Harrow Co., *supra* note 1, at 92.

In an able early decision of one of our federal district courts it was stated that "it seems self-evident that a contract which is only co-extensive with the monopoly conferred by letters patent and which creates no additional restraint of trade or monopoly, does not conflict with the Sherman Act."[9]

It becomes important, therefore, to understand fully the nature of the patent grant and what is inherent in that grant.

In the half century that has elapsed since the passage of the Sherman Act, we have decisions from our courts on patent agreements covering almost every conceivable state of facts. While there is no rule of thumb to apply, and while borderline cases arise which may cause one person in good faith to conclude that a particular patent agreement is legal and another person to conclude that it is illegal, there are still definite answers to most questions that are likely to arise.

The following statement of the United States Supreme Court sets down the rule about as definitely as it can be stated: ". . . the rule is, with few exceptions, that any conditions which are not in their very nature illegal with regard to this kind of property, imposed by the patentee and agreed to by the licensee for the right to manufacture or use or sell the article, will be upheld by the courts."[10] This was preceded by a statement that "the very object of these [patent] laws is monopoly, . . ."[11] In the same case, the Court called attention to the necessity of ". . . recognizing the nature of the property dealt in . . ."[12] The failure to do so will result in confusion.

Let us therefore examine into the nature of the patent property and list the more common rights and wrongs with respect thereto that have been determined.

NATURE OF THE PATENT GRANT

In the course of the last century our courts have at frequent intervals emphasized the fundamental nature of the patent grant. They have not expressed any difference of opinion on this subject, not even in the more recent Supreme Court decisions.

The right which the patent confers consists solely in the right to exclude everyone except the patent owner from making, using, or vending the thing patented without permission of the patentee. That is all that the patent confers. Any right that the patentee himself may have to make, use, or sell his invention is a common-law right.

It is obvious that an inventor, whether or not he is granted a patent, has a right in his own invention or discovery. That is, he has a common-law right in his mental creation. At common law, however, he had no exclusive right, and the only way in which he could prevent the appropriation of his discovery by others was to conceal it. The patent supplements this common-law right by granting to the patentee the right to exclude others from making, using, or vending the invention.

[9] Blount Mfg. Co. v. Yale & Towne Mfg Co., 166 Fed. 555, 557 (D. Mass. 1909).
[10] Bement v. National Harrow Co., *supra* note 1, at 91.
[11] *Ibid.*
[12] *Id.* at 93.

That is what the Constitution means when it gives Congress the power to secure to the inventor the exclusive right to his discovery—that is, the right to exclude others for a limited period.

ERRONEOUS VIEWS EXPRESSED BY THE ANTITRUST DIVISION OF THE DEPARTMENT OF JUSTICE

The views just expressed regarding the nature and scope of the patent monopoly have not in recent years been willingly accepted by the United States Department of Justice. Repeated prior rulings of the Supreme Court have been absolutely ignored; and we find representatives of the Antitrust Division, in arguments before the Supreme Court, in testimony given before congressional committees, and in statements made before government investigating committees, expressing views as to what the law is directly contrary to the accepted views. For example, compare such statements of the Supreme Court as that

> a patent for an invention is as much property as a patent for land. The right rests on the same foundation, and is surrounded and protected by the same sanctions,[13]

with statements emanating from the Department of Justice, such, for example, as:

> There may be some doubt, however, whether patents are the kind of "property" included within the constitutional requirement for just compensation;[14]

and also,

> I mean there may be some question at to whether the taking of a patent is the taking of property within the meaning of the Constitution.[15]

And again, the same spokesman raises the question whether a patent is "a property right, or something that may be withdrawn."[16]

We also find the Antitrust Division urging, in a brief field by the Department of Justice as amicus curiae in the *Talking Pictures* case,[17] the novel theory that:

> If a patent grant is limited to its proper orbit . . . the scope of the rights of the patentee will be the legal *permission* to make, use and vend given by the statute to implement the constitutional provisions . . .
>
> In the simpler economy in which the notion of the patent was born, the usual patent monopoly was nothing more than the exclusive right to *produce* for a limited period of years . . .
>
> But if the rights of the patent owners are allowed to be extended beyond the *privilege to make, use and vend,* the whole matter becomes confused . . .
>
> The controlling principle is that the patent privilege does not go beyond the privilege "to make, use and vend."[18]

[13] See note 6 *supra.*

[14] *Hearings before the Senate Committee on Patents on S. 2303,* 77th Cong., 2d Sess. 36 (1942).

[15] *Id.* at 34.

[16] *Ibid.*

[17] General Talking Pictures Corp. v. Western Electric Co., 305 U. S. 124 (1938).

[18] In a brief filed by the Department of Justice as amicus curiae in General Talking Pictures Corp. v. Western Electric Co., *supra* note 17.

Furthermore, in testimony before the Senate Committee on Patents of the Seventy-seventh Congress, a statement was made on behalf of the Antitrust Division calculated to leave the impression that in the *early* days the inaccurate and unsubstantiated views quoted above expressed the correct basic principles, from which the Supreme Court later incorrectly strayed. For example, we have a statement from the Antitrust Division as follows:

> The first patent law interpreted "exclusive right" to mean an exclusive right to produce or use the invention. . . .[19] This meant giving a monopoly of production for a limited time.

No authority was or can be cited in support of such statement.

Thus we find advanced by those in responsible positions in the Department of Justice certain astounding and revolutionary views regarding patents. These erroneous views are, in the main: (1) that a patent merely grants to the inventor "*permission*" to make, use, and sell the new thing invented by him; (2) that the grant of any limited form of license, incorrectly called a "restrictive" license, is outside any right inherent in a patent; and (3) that patents do not represent property rights such as the United States Constitution undertakes to protect. These are concepts wholly different from those that have from the very first universally prevailed, up to and including the most recent pronouncements of the Supreme Court.

These erroneous views have been set forth because they are essential to an understanding of why the Supreme Court has taken such pains to reassert at some length in recent decisions the nature and scope of the patent monopoly, and especially the rights which the patentee has in general with reference to the grant of limited, or so-called "restrictive," licenses.

LICENSE RESTRICTIONS IN GENERAL

The inherent right to specify certain restrictions in patent licenses was early recognized by the courts. The Supreme Court said in *Gayler v. Wilder*:

> The monopoly did not exist at common law, and the rights, therefore, which may be exercised under it cannot be regulated by the rules of the common law.[20]

A leading case involving license restrictions is *Bement v. National Harrow Company,* in which is found the following statement:

> . . . the general rule is absolute freedom in the use or sale of rights under the patent laws of the United States. The very object of those laws is monopoly, and the rule is, with few exceptions, that any conditions which are not in their very nature illegal with regard to this kind of property, imposed by the patentee and agreed to by the licensee for the right to manufacture or use or sell the article, will be upheld by the courts.[21]

In the same case, the Court further stated, referring to the Sherman Antitrust Act, that it

[19] *Hearings, supra* note 14, at 627.
[20] 10 How. 477, 494 (U. S. 1850).
[21] 186 U. S. 70, 91 (1902).

. . . clearly does not refer to that kind of a restraint of interstate commerce which may arise from reasonable and legal conditions imposed upon the assignee or licensee of a patent by the owner thereof, restricting the terms upon which the article may be used and the price to be demanded therefor.[22]

Another case of interest, because it was the first in which the Supreme Court was called on to consider the above-mentioned arguments of the Government, is *General Talking Pictures Corporation v. Western Electric Company*.[23] In that case, after the Supreme Court had made its decision, the Government asked permission to intervene as amicus curiae upon rehearing. Permission was granted. The Court, speaking through Mr. Justice Brandeis, said:

That a restrictive license is legal seems clear. . . . As was said in *United States v. General Electric Company*, 272 U. S. 476, 489, the patentee may grant a license "upon any condition the performance of which is reasonably within the reward which the patentee by grant of the patent is entitled to secure. . . ." The practice of granting licenses for a restrictive use is an old one . . . So far as appears, its legality has never been questioned.[24]

Similarly, in more recent decisions, down to the current ones, we find the Supreme Court in agreement upon such statements of the law, as will be seen by subsequent reference to those decisions. There seems to have been no question in the minds of the justices as to the established law and its application to the facts, though the Court split on the question of the remedy that should be applied where violations of the law were found to exist.

RESTRICTIONS WITHIN THE SCOPE OF THE PATENT GRANT

There are a number of restrictions or limitations which it is well recognized that a patentee may place on a license to another in the exercise of his rights under a patent. These will be briefly referred to.

1. *Royalty*. In general, the patentee may fix any terms of royalty he chooses.

2. *Sale price*. The patentee may grant a license to manufacture and to sell only at prices fixed by the patentee.[25] When there are a number of licensees, the patentee may fix uniform prices for the various licenses as a condition of the waiver of his exclusive rights.

Such price fixing must be based, however, on the belief that the patent is valid, and a patent must not be used as a mere subterfuge for price fixing. Nor can the licensees use the patent as an excuse for agreeing among themselves to fix prices.

Also, so long as the patentee, who himself manufactures, retains title to the articles which he manufactures under the patent, his patent rights permit him to fix the price at which his distributors (*del credere* agents) may sell the article. There is no violation of the antitrust laws in fixing the price at which such agents shall sell to the consumer.

[22] *Id.* at 92. [23] 305 U. S. 124 (1938). [24] *Id.* at 127.

[25] United States v. General Electric Co., 272 U. S. 476 (1926). For extremely important recent holdings on this subject, see the *Line Material* and the *Gypsum* cases, *infra*.

3. *Quantity.* The patentee may, in the license, limit the quantity or the percentage of the total output to be manufactured by the licensee.

4. *Territorial licenses.* The statutes provide that the patentee may assign his rights under his patent for a specified territory.[26] Likewise, he may grant licenses, exclusive or non-exclusive, for a given territory. He may even limit the use to the licensee's own factory or place of business.

5. *Number of licensees.* The patentee can determine for himself the persons, one or more, whom he will license. The mere fact that it may be his general policy to issue licenses does not obligate him to grant licenses to all comers. The patent owner may license or refuse to license as he sees fit.

6. *Field of use or purpose for which the license is granted.* The patentee may grant licenses restricted to a particular field or fields of use, or for some particular purpose or purposes.

These are the more general forms of limited or restricted licenses which the courts recognize as valid by virtue of rights accruing to the patentee from the grant of his patent.

RESTRICTIONS OUTSIDE THE SCOPE OF A PATENT

Having pointed out some of the kinds of restricted or limited licenses that are within the rights granted by a patent, I shall next consider some of the restrictions which the courts have held to be outside the scope of a patent.

In the first place, the Supreme Court has uniformly held that, after the unrestricted sale of a patented article by the patentee, or by a licensee having unqualified rights to make the sale, the article is freed from the monopoly of the patent and an agreement with respect to subsequent control cannot be justified by the fact that the article is covered by a patent.[27] In other words, the article, after such sale, moves outside the patent monopoly. In applying the old doctrine that, after sale of a patented article, the patent on it can no longer control the use of that article, the Supreme Court has gone so far as to state that such is the case irrespective of the fact that the use to be made of the article sold is itself covered by still another patent. Once having sold an article for its intended use, the patent owner has lost control of further use of such article.[28]

There are certain restrictive agreements, properly so-called, which do not find justification by virtue of patent ownership. Among these may be mentioned: (1) Resale price maintenance; (2) agreement of a patent owner not to use his own invention, or to restrict his own use, in the absence of a complete transfer of his patent rights to another; (3) agreement to use only supplies furnished by the patent owner in connection with an article sold or leased by the patentee; and (4) agree-

[26] REV. STAT. §4898 (1875), 35 U. S. C. §47 (1940).
[27] Dr. Miles Medical Co. v. John D. Park & Sons Co., 220 U. S. 373 (1911).
[28] *See* Ethyl Gasoline Corp. v. United States and United States v. Univis Lens Co., *infra.*

ments in general not to deal in the goods, wares, or merchandise of a competitor.

Such agreements, as well as methods of conducting business, outside the patent monopoly should be scanned with care to determine whether they are likely to result in unreasonably lessening competition or in restraint of trade in interstate or foreign commerce, and thereby violate the antitrust laws. Also, in general, care should be taken that the patent is not being used contrary to the public interest. The courts have even gone so far as to consider attempts to use the patent for such purposes as a misuse thereof, even though there is no violation of the antitrust laws. Recent decisions of the Supreme Court are to the effect that in such cases the patentee will be refused relief against infringement.

In short, it may be said the recent trend is to apply the antitrust laws most stringently, or even to consider with care whether, aside from violation of the antitrust laws, a use of the patent against the public interest is involved.[29]

In general, it may be said that whether patent agreements involving "restrictions" run afoul of the antitrust laws depends upon the nature of the agreements, and primarily upon whether the restraints are within the four corners of the right to restrain granted by the patent, or are restraints resulting from agreements extending beyond the patent monopoly, even though dealing incidentally with the patent property as a subject of contract.

AGGREGATION OF PATENTS UNDER A SINGLE CONTROL

Many of the decisions which have been referred to have dealt with instances in which a number of patents were brought under a single control either by cross-licensing or by pooling. In this connection, two questions arise: (1) To what extent may "non-competing" or "supplementary" patents be acquired legally by purchase or consolidation to strengthen a commercial position? and (2) the same question where the patents are "competing" patents—that is, patents representing alternative products or methods. An instance of the consolidation of "non-competing" or "supplementary" patents is found in *United States v. Winslow*,[30] in which it was held that the union in one corporation of three different companies, each manufacturing under a different "non-competing" group of patented machines, collectively used for making shoes, is not forbidden by the Sherman Act, although a large percentage of the shoe-machinery business may thus be put in a single hand.[31]

The second question, concerning the right by purchase or merger to bring under the same control "competing" patents previously held by adverse interests, does not seem to have been before the Supreme Court as often as might be expected. Of course, such combinations would be subject to careful scrutiny by the courts to ascertain the reasonableness of any restraint which might arise. The *Gasoline*

[29] *See* Morton Salt Co. v. G. S. Suppiger Co. and B. B. Chemical Co. v. Ellis, *infra*.

[30] 227 U. S. 202 (1913).

[31] For an opinion with substantially the same effect but by a divided court, see the first *Shoe Machinery* case, United States v. United Shoe Machinery Co., 247 U. S. 32 (1918).

Cracking case[32] presents a variety of interesting questions on this subject worthy of detailed consideration. In that case there were four main defendants, each owning its own patents for processes used in gasoline cracking. There were forty-six secondary defendants who were manufacturing under licenses from the main defendants. In all, some seventy-nine contracts had been entered into.

No fundamental patent was involved. Nevertheless, litigation had arisen and still more was threatened. As a result, the parties entered into the agreement complained of. The agreement provided that each main defendant might secure licenses under the patents of the others, together with the right to issue sub-licenses. The contract also provided for fixed royalties, all of which were to be divided according to a fixed plan.

The Court in this case found that there was no unreasonable restriction of competition; that the amount of gasoline produced by the parties to the contract was only about 26 per cent of the total gasoline production; and that there was no proof that the defendants could, by reason of their contract, fix the market price of gasoline.

In short, the Court found that no additional monopoly of any kind and no restraint of interstate commerce had been effected by means of the contract.

The subject of accumulating patents by purchase, the pooling of patents, cross-licensing agreements, acquisition of improvement patents, etc., cannot be gone into fully within the limits of the present paper.[33] It should be borne in mind, however, as has been stated, that the monopoly granted by patents does not exempt the patentee from the prohibitions of the antitrust laws. However, agreements reasonably necessary to protect the patent owner in the enjoyment of his patent rights are not in conflict with the antitrust laws. The mere grant of licenses—*i.e.*, the waiver of exclusion—does not lessen competition or restrain trade, but quite the contrary, and is not in conflict with the antitrust laws. Patents, however, may not be used as a subterfuge for maintaining a monopolistic combination. This is well set forth in *Blount Manufacturing Company v. Yale & Towne Manufacturing Company,* wherein the Court stated:

> It seems self-evident that a contract which is only coextensive with the monopoly conferred by letters patent, and which creates no additional restraint of trade or monopoly, does not conflict with the Sherman Act. . . . A contract whereby the manufacturers of two independent patented inventions agree not to compete in the same commercial field deprives the public of the benefits of competition, and creates a restraint of trade which results, not from the granting of letters patent, but from agreement.[34]

RECENT SUPREME COURT DECISIONS

I have discussed the time-honored decisions of the Supreme Court with reference to the scope of the patent monopoly. I have mentioned the divergent views that the

[32] Standard Oil Co. v. United States, 283 U. S. 163 (1931).

[33] For a decision dealing with the acquisition of improvement patents and possible dangers involved, see Transparent-Wrap Machine Corp. v. Stokes & Smith Co., *infra.*

[34] 166 Fed. 555, 557 (D. Mass. 1909).

Antitrust Division of the Department of Justice has urged. I shall now refer to the more recent decisions of the Supreme Court in a chronological, case-by-case method to determine to what extent the Supreme Court has reaffirmed previous holdings and to what extent, if at all, it has expressed departures from those holdings. A study of these decisions discloses that there has been no departure from the established view regarding the rights which a patentee acquires; that the courts will deal harshly with "misuse" of patents even where there is no violation of antitrust laws, having thrown aside precedents; and that decrees may be expected which in effect wholly or partially confiscate patent property.

The General Talking Pictures *case*.[35] This case reaffirms the right of a patentee to grant restricted licenses, and holds that, where a license is restricted to a particular field or purpose of use, one who knowing the fact purchases the apparatus from the licensee and uses it in other fields is an infringer. On this latter point there was a dissenting opinion.

Ethyl Gasoline Corporation v. United States.[36] In this case the rights of a patentee and the limits of those rights are stated at some length. Ethyl, after the sale of its product, was attempting through other patents to control jobbers' prices—in effect trying to control resale prices. The Court stated:

> [The situation] is one in which appellant has established the marketing of the patented fuel in vast amounts on a nationwide scale through the 11,000 jobbers and at the same time, by the leverage of its licensing contracts resting on the fulcrum of its patents, it has built up a combination capable of use, and actually used, as a means of controlling jobbers' prices and suppressing competition among them.[37]

Morton Salt Company v. G. S. Suppiger Company.[38] This was a suit brought for an injunction and an accounting for the infringement of a patent on a machine for depositing salt tablets.

The Court found that the patentee was making use of its patent monopoly to restrain competition in the marketing of unpatented articles (salt tablets) for use with the patented machine, and was thus creating a limited monopoly not within that created by the patent. The Court stated:

> It is a principle of general application that courts, and especially courts of equity, may appropriately withhold their aid where the plaintiff is using the right asserted contrary to the public interest.
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> . . .
>
> Equity may rightly withhold its assistance from such a use of the patent by declining to entertain a suit for infringement, and should do so at least until it is made to appear that the improper practice has been abandoned and that the consequences of the misuse of the patent have been dissipated.[39]

The Court found it unnecessary to decide whether the Clayton Act had been violated.

[35] 305 U. S. 124 (1938).
[36] 309 U. S. 436 (1940).
[37] *Id.* at 457.
[38] 314 U. S. 488 (1942).
[39] *Id.* at 492, 493.

B. B. Chemical Company v. Ellis.[40] This was a companion case to the *Morton Salt Company* case, and the decision of the Court was to the same effect, stating:

> It will be appropriate to consider petitioner's right to relief when it is able to show that it has fully abandoned its present method of restraining competition in the sale of unpatented articles and that the consequences of that practice have been fully dissipated.[41]

United States v. Univis Lens Company.[42] This case is similar in some respects to the *Ethyl* case. It holds that one who sells a patented product in its uncompleted form, for further development, cannot rely on other patents relating to subsequent treatment to control prices. He has parted with his control of the product. He has parted with any monopoly that patents can confer.

United States v. Masonite Corporation.[43] In this case a number of corporations were each engaged either in manufacturing or in selling building materials. All maintained selling organizations and to a large extent competed in the same markets. Some had competing patents, others did not. Under the agreements, Masonite designated the other parties as "agents" and appointed them to sell Masonite products. Masonite fixed the minimum selling prices of such "agents." Furthermore, Masonite agreed to adhere to the prices and conditions which it fixed for those agents, thus binding itself to a condition outside the scope of its patents, since the patent gives the patent owner no right to agree to exclude himself. The Court found that there was no genuine agency involved, and hence the case did not come within the ruling of the *General Electric* case.[44] The holding was to the effect that in turning over its products to its so-called agents, the Masonite company parted with its right to any further control; that when the patented product "passes to the hands of the purchaser, it is no longer within the limits of the monopoly"; that he then has, so far as the Sherman Act is concerned, no greater right to price maintenance than the owner of the unpatented commodity would have. The Court went to some length in reasserting the scope and limits of the patent monopoly.

Sola Electric Company v. Jefferson Electric Company.[45] This case involved a patent license contract which provided that the licensee, on sales of licensed transformers throughout the United States, should conform to the prices fixed by licensor for the sale of competing patented articles by other licensees and by the licensor. The Court stated:

> Such a restriction on the price of articles entering interstate commerce is a violation of the Sherman Act save only as it is within the protection of a lawfully granted patent monopoly. . .

and therefore,

> . . . petitioner may assert the illegality of the price-fixing agreement and may offer any

[40] 314 U. S. 495 (1942).
[41] *Id.* at 498.
[42] 316 U. S. 241 (1942).
[43] 316 U. S. 265 (1942).
[44] United States v. General Electric Co., 272 U. S. 476 (1926).
[45] 317 U. S. 173 (1942).

competent evidence to establish its illegality, including proof of the invalidity of the patent.[46]

The Glass Industry *case*.[47] The Court went to some length in reaffirming old principles and was unanimous in finding violation of the Sherman Act. Not even in the dissenting opinions was any disagreement expressed with respect to the fundamental concepts of the patent system. Only with respect to the nature of the decree was there dissent. The dissents refer to "a . . . misconception, that men who have misused their property, and acquired much of it, by violating the Sherman Act, are free for the future to continue using it as are other owners who have committed no such offense."[48]

Precision Instrument Manufacturing Company v. Automotive Maintenance Machinery Company.[49] "The guiding doctrine in this case," the Court stated, "is the equitable maxim that 'he who comes into equity must come with clean hands.'" Continuing, the Court said:

> A patent by its very nature is affected with a public interest. As recognized by the Constitution, it is a special privilege designed to serve the public purpose of promoting the "Progress of Science and Useful Arts." At the same time, a patent is an exception to the general rule against monopolies and to the right to access to a free and open market.[50]

Edward Katzinger Company v. Chicago Metallic Manufacturing Company[51] and *MacGregor v. Westinghouse Electric & Manufacturing Company*.[52] The question here is whether the defendant, in a suit to recover royalties only under a patent license agreement containing price-fixing provisions, can challenge the validity of the patent despite a covenant in the license contract that he would not do so.

The Court held that it can, with four of the justices in a strong dissent.

Transparent-Wrap Machine Corporation v. Stokes & Smith Company.[53] The provision of the agreement around which the controversy turned was a covenant to assign improvement patents. With respect thereto, the Court stated:

> An improvement patent, like the basic patent to which it relates, is a legalized monopoly for a limited period. The law permits both to be bought and sold. One who uses one patent to acquire another is not extending his patent monopoly to articles governed by the general law and as respects which neither monopolies nor restraints of trade are sanctioned. He is indeed using one legalized monopoly to acquire another legalized monopoly.
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> . . .
>
> It is true that for some purposes the owner of a patent is under disabilities with which owners of other property are not burdened. Thus where the use of unpatented materials is tied to the use of a patent, a court will not lend its aid to enforce the agreement though control of the unpatented article falls short of a prohibited restraint of trade or monopoly. Morton Salt Co. v. Suppiger Co., supra. There is a suggestion that the same course

[46] *Id.* at 175, 177.
[47] Hartford-Empire Co. v. United States, 323 U. S. 386 (1945).
[48] *Id.* at 440, 441.
[49] 324 U. S. 806 (1945).
[50] *Id.* at 814, 816.
[51] 329 U. S. 394 (1947).
[52] 329 U. S. 402 (1947)..
[53] 329 U. S. 637 (1947).

should be followed in this case since the tendency of the practice we have here would be in the direction of concentration of economic power that might run counter to the policy of the anti-trust laws. The difficulty is that Congress has not made illegal the acquisition of improvement patents by the owner of a basic patent. The assignment of patents is indeed sanctioned. And, as we have said, there is no difference in the policy of the assignment statute whatever consideration may be used to purchase the improvement patents. And apart from violations of the anti-trust laws to which we will shortly advert, the end result is the same whether the owner of a basic patent uses a license to obtain improvement patents or uses the wealth which he accumulates by exploiting his basic patent for that purpose. In sum, a patent license may not be used coercively to exact a condition contrary to public policy. But what falls within the terms of the assignment statute is plainly not per se against the public interest.

. . .

We are quite aware of the possibilities of abuse in the practice of licensing a patent on condition that the licensee assign all improvement patents to the licensor. Conceivably the device could be employed with the purpose or effect of violating the anti-trust laws. He who acquires two patents acquires a double monopoly. As patents are added to patents a whole industry may be regimented. The owner of a basic patent might thus perpetuate his control over an industry long after the basic patent expired. Competitors might be eliminated and an industrial monopoly perfected and maintained. Through the use of patent pools or multiple licensing agreements the fruits of invention of an entire industry might be systematically funneled into the hands of the original patentee. See United Shoe Machinery Co. v. La Chapelle, 212 Mass. 467, 99 N. E. 289.

. . .

Congress, however, has made no specific prohibition against conditioning a patent license on the assignment by the licensee of improvement patents. But that does not mean that the practice we have here has immunity under the anti-trust laws. Indeed, the recent case of Hartford-Empire Co. v. United States, 323 U. S. 386 . . . , 324 U. S. 570 . . . , dramatically illustrates how the use of a condition or covenant in a patent license that the licensee will assign improvement patents may give rise to violations of the anti-trust laws.

. . .

We only hold that the inclusion in the license of the condition requiring the licensee to assign improvement patents is not per se illegal and unenforceable.[54]

There were dissenting opinions, in one of which it is stated: ". . . the Court's decision in this case unduly enlarges the scope of patent monopolies and is inconsistent with the philosophy enunciated in *Mercoid Corporation v. Mid-Continent Company*, 320 U. S. 661 . . . and similar cases."[55]

United States v. National Lead Company.[56] This case presents a so-called "international cartel" dating back to 1920, at which time the National Lead Company entered into an agreement with foreign companies by which the world markets were divided, even in some cases where there were no patents in certain of those countries. Later, in 1933, the du Pont Company, a potential competitor, entered to a greater or lesser extent into the combination.

Whether or not the original agreement by the National Lead Company was a

[54] *Id.* at 644, 645, 646, 647, 648.
[55] *Id.* at 648.
[56] 67 Sup. Ct. 1634 (U. S. 1947).

violation of the antitrust law was the first issue presented. The second issue was with respect to the later participation of the du Pont Company in such combinations in 1933, the question being whether the latter company had succeeded in avoiding not only the form but also the substance of the transgression.

Still a third issue was whether the contract between National Lead and du Pont was offensive to the antitrust laws apart from the relation of that contract and the parties thereto to foreign producers.

The validity of none of the hundreds of patents involved had been litigated.

The Court laid stress on the fact that a new industry had been created for titanium products and that this new industry had been dominated because of the agreements entered into. On the question of violation of the anitrust laws there was no difference of opinion; the Court found that there had been a violation thereof. Referring to the special conditions in the case, the Supreme Court found:

> These findings disclose the special conditions which confronted the District Court in framing its decree. They disclose a vigorous, comparatively young, but comparatively large, world-wide industry in which two great companies, National Lead and du Pont, now control approximately 90% of the domestic production in substantially equal shares. The balance of that production is in the hands of two smaller companies. Each of these is affiliated with larger organizations, not parties to this case. The findings show vigorous and apparently profitable competition on the part of each of the four producers, including an intimation that the smaller companies are gaining ground rather than losing it. Keen competition has existed both before and after the elimination, by the 1933 agreement and understanding, of certain patent advantages from among the weapons of competition.[57]

There was no difference of opinion regarding the question of violation of the antitrust laws. There was, however, a dissenting opinion with respect to the proper remedy which should be applied in order to grant effective relief.

The decision of the Court, a lengthy one, is of importance as a pronouncement upon international agreements, a subject upon which there was little prior authoritative statement.

International Salt Company, Inc. v. United States.[58] The Government brought this civil action to enjoin the International Salt Company from carrying out the provisions of its leases of its patented machines to the effect that the lessee would use therein International's salt products, which were unpatented goods.

The Court stated:

> Under the law, agreements are forbidden which "tend to create a monopoly," and it is immaterial that the tendency is a creeping one rather than one that proceeds at full gallop; nor does the law await arrival at the goal before condemning the direction of the movement.
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> . . .
>
> Of course a lessor may impose on a lessee reasonable restrictions designed in good faith to minimize maintenance burdens and to assure satisfactory operations. . . . Rules

[57] *Id.* at 1647.
[58] 68 Sup. Ct. 12 (U. S. 1947).

for use of leased machinery must not be disguised restraints of free competition, though they may set reasonable standards which all suppliers must meet.[59]

On this main issue there was no dissent, though on the matter of the remedy that should be applied there was a dissenting opinion in which is the statement: "Agreeing wholeheartedly with the Court's opinion on the main issue, I am left unpersuaded. . ."[60] with respect to the nature of the decree directed to be entered.

United States v. U. S. Gypsum Company.[61] This case involved license agreements in which a minimum sale price was provided for.

The Court was unanimous in holding that the instant case presented a violation of the antitrust laws, and distinguished it from the decision of the Court in the *General Electric* case.

The decision is a voluminous one, and the principal question involved may be gathered from the following quotation from the opinion:

> The General Electric case affords no cloak for the course of conduct revealed in the voluminous record in this case. That case gives no support for a patentee, acting in concert with all members of an industry, to issue substantially identical licenses to all members of the industry under the terms of which the industry is completely regimented, the production of competitive unpatented products suppressed, a class of distributors squeezed out, and prices on unpatented products stabilized. We apply the "rule of reason" of Standard Oil Co. of New Jersey v. United States, 221 U. S. 1, . . . to efforts to monopolize through patents as well as in non-patent fields. Even in the absence of the specific abuses in this case, which fall within the traditional prohibitions of the Sherman Act, it would be sufficient to show that the defendants, constituting all former competitors in an entire industry, had acted in concert to restrain commerce in an entire industry under patent licenses in order to organize the industry and stabilize prices. That conclusion follows despite the assumed legality of each separate patent license, for it is familiar doctrine that lawful acts may become unlawful when taken in concert. Such concerted action is an effective deterrent to competition; . . . The rewards which flow to the patentee and his licensees from the suppression of competition through the regulation of an industry are not reasonably and normally adapted to secure pecuniary reward for the patentee's monopoly.[62]

One feature of the case not necessary to the decision is of interest because the Court stated that in an antitrust suit the Government should have the right to challenge the validity of patents involved. From this view Mr. Justice Frankfurter, while concurring in the main decision, expressly dissented, stating:

> In Part II of the opinion the Court confessedly deals with an issue that "need not be decided to dispose of this case." Deliberate dicta, I had supposed, should be deliberately avoided. Especially should we avoid passing gratuitously on an important issue of public law where due consideration of it has been crowded out by complicated and elaborate issues that have to be decided. Accordingly, I join in the Court's opinion, except Part II.[63]

United States v. Line Material Company.[64] The opinion of the Supreme Court in this case was rendered by Mr. Justice Reed. The Court found that the respondent

[59] *Id.* at 15, 16.
[60] *Id.* at 18.
[61] 68 Sup. Ct. 525 (U. S. 1948).
[62] *Id.* at 544-545.
[63] *Id.* at 548.
[64] 68 Sup. Ct. 550 (U. S. 1948).

had been guilty of violating the antitrust laws by sales price restrictions in license contracts.

The question for decision was whether, in the light of the prohibition of the Sherman Act, two or more patentees in the same patent field may legally combine their patent monopolies so as to control the sale price of the patented devices manufactured under both groups of patents.

The two patents involved were a Lemmon patent issued to the Southern States Equipment Corporation and a Schultz patent assigned to the Line Material Company. As a result of an interference in the Patent Office, broad claims were issued in the Lemmon patent and narrower claims in the Schultz patent. The Court recognized the fact that "only when both patents could be lawfully used by a single maker could the public or the patentees obtain the full benefit of the efficiency and economy of the inventions."[65] Because of this, Southern granted a license to Line with a provision by which it could issue licenses to others, Line agreeing to sell equipment covered by the Southern patent at prices not less than those fixed by Southern. Southern made the same agreement for equipment covered solely by the Line patent. Thereafter, Line issued a number of licenses to others containing the sales price limitation feature.

The Government attacked the rationale of the *General Electric* case and urged that is be overruled or differentiated. Mr. Justice Reed stated that he himself accepted the rule in the *General Electric* case, but pointed out that the instant case could not be decided on that basis, since on the question of the right of a patentee to fix sale price restrictions in a license, the Court was equally divided, four of the justices upholding the opinion in the *General Electric* case and four others, though concurring in the view that in the case in question there was a violation of the antitrust laws, taking the further view that the *General Electric* case should be overruled. In the Court's opinion it is stated:

> Where a patentee undertakes to exploit his patent by price fixing through agreements with anyone, he must give consideration to the limitations of the Sherman Act on such action. The patent statutes give an exclusive right to the patentee to make, use, and vend and to assign any interest in this monopoly to others. The General Electric case construes that as giving a right to a patentee to license another to make and vend at a fixed price. There is no suggestion in the patent statutes of authority to combine with other patent owners to fix prices on articles covered by the respective patents. As the Sherman Act prohibits agreements to fix prices, any arrangement between patentees runs afoul of that prohibition and is outside the patent monopoly.[66]

In short, the Court held that the combination of different patentees for the purpose of fixing the sale prices was unlawful under the Sherman Act and that others who subsequently enter into license agreements with price-fixing provisions with knowledge of the contract are equally subject to the prohibition of the antitrust laws.

[65] *Id.* at 553.
[66] *Id.* at 563.

Mr. Justice Douglas, with whom Mr. Justice Black, Mr. Justice Murphy, and Mr. Justice Rutledge joined, while concurring in the Court's opinion, stated flatly, "I would be rid of United States v. General Electric Co.," and in his concurring opinion he gives his reasons for that position.[67]

Mr. Justice Burton, with whom the Chief Justice and Mr. Justice Frankfurter concurred, wrote a dissenting opinion as to the violation of the antitrust laws, and at great length set forth the reasons why the decision in the *General Electric* case should apply to the instant case.

Thus it appears that on the question of overruling the opinion in the *General Electric* case the Court was divided four to four, one of the justices taking no part in the consideration of the case.

[67] *Id.* at 565.

COMPULSORY LICENSING IN OTHER COUNTRIES

By P. J. Federico*

Great Britain

The present law of Great Britain on the subject of compulsory licensing of patents[1] is that of 1919,[2] with the minor amendments of 1928, 1932, and 1938.[3] This law represents a blending of two concepts and fulfills two different functions. One is the traditional requirement of working the invention within the country.[4] The other is the regulation of the manner in which patents are used by the patentee. These are united in a theory of "abuse of monopoly rights" by Section 27 of the law, which represents a distinctly British contribution.

Section 27 declares the general principle upon which patents are granted in England: to encourage invention and to secure the working of new inventions on a commercial scale in the country without undue delay.

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[1] "Compulsory working," "working clause," "revocation of patents for non-working," and similar phrases refer to the requirement or condition that a patent shall be forfeited, revoked, or void if there has been no commercial manufacture of the invention (working) in the country. The laws ordinarily specify a certain number of years after the grant of the patent within which the working must be commenced.

"Compulsory licensing" of patents refers to the condition or requirement that, upon some default or dereliction of the patentee, an administrative agency or court may grant, or compel the patentee to grant, a license under the patent. The default of the patentee may be a failure to work the invention, in which case compulsory licensing and revocation of the patent are two different consequences or penalties for the same failure. But, as will be seen, compulsory licenses may be ordered in other situations as well. The expression "compulsory licenses" is sometimes loosely used to indicate the proposal that patents be granted with the condition that anyone who wishes, without any default of the patentee, may obtain licenses under the patent. This is excluded from the meaning of phrase at this point.

[2] Patents and Designs Act, 1919, 9 & 10 Geo. V, c. 80.

[3] For a detailed history of the early British patent system, see Harold G. Fox, Monopolies and Patents (1947), and J. Wyndham Hulme, *The History of the Patent System Under the Prerogatives and at Common Law*, 12 L. Q. Rev. 141-154 (1896); *On the Consideration of the Patent Grant, Past and Present*, 13 L. Q. Rev. 313-318 (1897); *The History of the Patent System Under the Prerogative and at Common Law: A Sequel*, 16 L. Q. Rev. 44-56 (1900); *On the History of Patent Law in the Seventeenth and Eighteenth Centuries*, 18 L. Q. Rev. 281-288 (1902). The texts, in French, of the patent statutes of foreign countries are printed in *La Propriété Industrielle*, the monthly publication of the Berne Bureau established by the International Convention, and in English in the periodical, *Patent & Trade-Mark Review*. The Chartered Institute of Patent Agents, London, has published Patent Laws of the World (2 vols. 1911), with supplements to date. There are a number of older collections.

[4] In most countries the majority of patents issued are granted to foreigners. The United States is low, granting only one-eighth of its patents to foreigners; Germany and Japan grant one-fourth, England and France one-half, and practically all of the other countries grant more than half of their patents to foreigners. The proportion is quite high in many countries: for example, 80 per cent in Holland and 90 per cent in Canada. These figures are for the period 1930-1937. *Hearings before the TNEC*, Pt. 3, 76th Cong., 1st Sess. 1152 (1939).

Subsection 1 of Section 27 states that if there has been an abuse of the monopoly rights under a patent any interested person may, at any time after three years from the grant of the patent, apply to the Comptroller (the head of the Patent Office) for relief.

Subsection 2 provides that the monopoly rights under a patent shall be deemed to have been abused in any of six specified circumstances.

The relief to be granted is specified in Subsections 3, 4, 5, 6, and 6A, which give the Comptroller the power to order the granting of licenses or to take other action there specified. Subsections 7 to 12 prescribe the procedure.

The first ground on which a compulsory license may be asked is the traditional one of failure to work the patented invention on a commercial scale in the country without a satisfactory reason for the non-working.

In discussing this ground it is necessary to consider the meaning of three phrases: "the patented invention"; "working on a commercial scale"; and "satisfactory reason for non-working."

"The patented invention" refers to the invention specifically described and claimed in the specification. If the patentee has claimed a wholly new machine he must manufacture the whole machine in the country. If he claims an improvement in a known machine, he need not necessarily manufacture the whole machine, but if the improvement is claimed in combination with a machine consisting of known parts it may be necessary to manufacture the improvement and put together the whole machine in the country. If the invention consists merely of a new combination of old and well-known elements it may be sufficient to assemble the machine in the country. Each case must be decided on its merits, considering the nature of the invention and exactly what is claimed in the patent, as well as other relevant circumstances.[5]

Since the language of the section does not specify who must do the working, reliance may be placed upon manufacture by infringers in order to avoid the penalty for non-working.

A definition of "working on a commercial scale" is found in Section 93 of the Act. It is there stated that:

> "Working on a commercial scale" means the manufacture of the article or the carrying on of the process described and claimed in a specification for a patent in or by means of a definite and substantial establishment or organisation, and on a scale which is adequate and reasonable under all the circumstances.

What constitutes a satisfactory reason for the non-working of the invention must be determined in each individual case. Insufficient time to work the invention is recognized as a reason in the Act itself.[6]

[5] These statements are made on the basis of decisions concerning a similar phrase in the prior law. See note 3, *supra*.

[6] The following reasons for non-working are treated in decisions under the prior law:

Absence of demand and lack of capital are not acceptable excuses, if the patentee has failed to take reasonable steps to create the demand or to secure the necessary capital.

The second ground for the grant of a compulsory license is specified as the prevention of the working of the invention in England by importing the patented article from abroad.[7] The term "patented article" is defined in Subsection 13 as including not only an article which is patented, but also an article which is not patented but which is made by a patented process. This ground of compulsory license is likewise an expression of one of the traditional views with respect to working of the patent. The laws of some countries have contained provisions which canceled the patent or rendered it invalid if the patentee imported articles from abroad. This subsection applies not only if the patentee prevents the working of the invention in England by importation but also if by that means he makes the working in England unprofitable. The subsection also includes cases in which the patentee permits infringement by importation to continue unchecked to the detriment of commercial establishments in the country.

The third ground for granting compulsory licenses is that the demand for the patented article in the country is not being met to an adequate extent and on reasonable terms.

The requirement that the demand be adequately met may be considered as being merely an extension of, or as being involved in, the first ground. In fact, the first three grounds could very well have been grouped into one broader ground rather than being split into three separate statements, since they overlap to a considerable extent.[8]

The requirement that the demand be met on reasonable terms is allied to the grounds which follow.

The fourth ground for the grant of compulsory licenses is that the patentee refuses to grant licenses upon reasonable terms, to the prejudice of the trade or industry of the country, and it is in the public interest that a license should be granted. This ground is, of course, the broadest one with respect to compulsory licensing, and

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That manufacture in England would not be as profitable as manufacture abroad is not a satisfactory reason, but proof that there is no hope of profit, or that nothing but losses can be expected in view of the times, might be considered where foreign manufacture has not been favored.

Absence of special skill, experience, or equipment in the country has been held not an adequate reason for non-working, although this reason might be sufficient for securing more time to work the invention.

Infringement of a prior dominating patent may be acceptable as a reason for non-working.

[7] The specific language is:

"(b) If the working of the invention within the United Kingdom on a commercial scale is being prevented or hindered by the importation from abroad of the patented article by the patentee or persons claiming under him, or by persons directly or indirectly purchasing from him, or by other persons against whom the patentee is not taking or has not taken any proceedings for infringement. . . ."

[8] Four of the seven decisions under Section 27 involve primarily the failure to work the invention in England, including supplying the demand by importation: Intertype, Ltd., 43 Rep. Pat. Cas. (Reports of Patent, Design and Trade-Mark Cases) 305 (Comptroller, 1926) (compulsory license granted); Cathro, 51 Rep. Pat. Cas. 75 (Comptroller, 1933) (compulsory license granted in part only); McKechnie Bros. Ltd., 51 Rep. Pat. Cas. 441 (Comptroller, 1934) and 51 Rep. Pat. Cas. 461 (High Court, 1934) (granted); Fabricmeter Company, Ltd., 53 Rep. Pat. Cas. 307 (Comptroller, 1936) (granted); *cf.* Ungarische Gummiwarenfabriks Actiengesellschaft, 50 Rep. Pat. Cas. 35 (Comptroller, 1932).

gives the power to grant such licenses whenever it is considered necessary for the benefit of the country to do so.[9]

The fifth ground for granting compulsory licenses is the patentee's attaching to sales, leases, or licenses conditions which are prejudicial to the trade or industry of the country.[10] The ground is in many respects analogous to Section 3 of the Clayton Act[11] in this country, which makes unlawful sales or leases to which are attached certain specified conditions. The provision of the British statute is considerably broader since it applies not only to any conditions attached to sales or leases but also to conditions attached to licenses. However, these conditions are not made illegal as in the Clayton Act but are merely made the basis of compulsory licenses if the conditions are considered unfair or prejudicial.

The sixth ground for granting compulsory licenses is the use by the patentee of a patent for a process, involving the use of unpatented materials, for the purpose of asserting some control over the manufacture, use, or sale of the unpatented materials.[12] This is the situation which has arisen in this country in a number of recent decisions[13] and which has resulted in the holding that such attempts are illegal and render a patent unenforceable as long as the practice is continued.

The third to sixth grounds, which have just been mentioned, are in effect a means of regulating the manner in which a patentee uses his patent. They cover unreasonable refusal to grant licenses, and the making of unreasonable contracts with respect to patents and patented articles.

Subsection 3 of Section 27 specifies the powers of the Comptroller in the administration of the compulsory licensing provisions. If the Comptroller is satisfied that a case of abuse of the monopoly rights under a patent has been established, and if

[9] The text is:

"(d) If, by reason of the refusal of the patentee to grant a license or licenses upon reasonable terms, the trade or industry of the United Kingdom or the trade of any person or class of persons trading in the United Kingdom, or the establishment of any new trade or industry in the United Kingdom, is prejudiced, and it is in the public interest that a license or licenses should be granted. . . ."

Two important cases have been brought under this fourth ground. Brownie Wireless Company, Ltd., 46 Rep. Pat. Cas. 457 (High Court, 1929), 45 T. L. R. 584 (1929) (compulsory license denied), and Loewe Radio Company, Ltd., 46 Rep. Pat. Cas. 479 (High Court, 1929) (denied).

[10] The exact language is as follows:

"(e) If any trade or industry in the United Kingdom, or any person or class of persons engaged therein, is unfairly prejudiced by the conditions attached by the patentee, whether before or after the passing of the Act, to the purchase, hire, license, or use of the patented article, or to the using or working of the patent process. . . ."

[11] 38 STAT. 731 (1914), 15 U. S. C. §14 (1940).

[12] The wording of the sixth ground in the act is:

"(f) If it is shown that the existence of the patent, being a patent for an invention relating to a process involving the use of materials not protected by the patent or for an invention relating to a substance produced by such a process, has been utilized by the patentee so as unfairly to prejudice in the United Kingdom the manufacture, use or sale of any such materials. . . ."

[13] Carbice Corp. v. American Patents Corp., 283 U. S. 27 (1931); Leitch Mfg. Co. v. Barber Co., 302 U. S. 458 (1938); Morton Salt Co. v. G. S. Suppiger Co., 314 U. S. 488 (1942); B. B. Chemical Co. v. Ellis, 314 U. S. 495 (1942); United States v. Univis Lens Co., 316 U. S. 241 (1942); Mercoid Corp. v. Mid-Continent Investment Co., 320 U. S. 661 (1943); Mercoid Corp. v. Minneapolis-Honeywell Regulator Co., 320 U. S. 680 (1943).

he deems it expedient under the circumstances, he may issue an order in accordance with five specified provisions in Subsection 3.

The Comptroller may issue an order declaring that licenses under the patent are open to anyone who may apply. The terms and conditions of such licenses are specified by the Comptroller on application to him. The technical phrase used in this connection is that the Comptroller "may order the patent to be endorsed with the words 'license of right.'" The order declaring the patent open to licensing may be made notwithstanding any existing agreements by the patentee which purport to preclude such general granting of licenses. If such an order is made, existing licensees may apply to have their terms revised, or rather to exchange their licenses for a license ordered by the Comptroller. "Licenses of right" are also provided for in Section 24 of the British law, which will be discussed in detail later.

Secondly, the Comptroller may order the granting of a license to the particular applicant before him. This license is to be granted upon such terms as the Comptroller thinks expedient, and may prevent the licensee from importing into the country. The licensee is entitled to call upon the patentee to sue infringers or to sue infringers himself if the patentee refuses to do so.[14]

Third, the Comptroller may, under certain circumstances, order that an exclusive license be granted. The circumstances specified in the statute are that the invention cannot be worked on a commercial scale without the expenditure of capital, to raise which reliance upon the patent monopoly is necessary. Then the Comptroller may order that an exclusive license be granted to the applicant or any other person who is able and willing to provide such capital. Subsections 4, 5, and 6 specify various conditions for such an exclusive license. The license is ordinarily granted so as to exclude even the patentee himself. An existing licensee is to be preferred, but the order may revoke any preexisting license. The new licensee may be ordered to compensate the patentee or an existing licensee for development expenses. The exclusive compulsory license should ordinarily guarantee to the patentee a minimum yearly royalty. The exclusive license is also subject to subsequent revocation if the licensee fails to work the invention within the time specified in the order or if he fails to expend the amount of capital specified.

The fourth paragraph refers to the license which may be granted pursuant to the sixth ground for compulsory license. The Comptroller may order the granting of licenses to the applicant and to such of his customers as the Comptroller may think expedient.

The fifth paragraph provided that the Comptroller could also order the patent revoked if he were satisfied that the objectives of the section could not be obtained by the exercise of the preceding powers. No instances of petitions for revocation of patents on this ground have occurred since the Act of 1919. This paragraph was deleted from the Act in 1938, and replaced by the new Subsection 6A, which follows

[14] The subsection, 27(3)(d), refers to Section 24 for some guides in settling the terms of the license.

the terms of the 1934 revision of the International Convention.[15] Under this provision the patent cannot be revoked until at least two years from the grant of the first compulsory license.

The last paragraph of Section 27 (3) provides that the Comptroller may also dismiss the application if he is of the opinion that the objects of the section will thus be best obtained.

Subsections 7 to 12, inclusive, of Section 27 specify the procedure to be followed in seeking compulsory licenses. The application must set out the nature of the applicant's interest, the facts on which he bases his case, and the relief which he is seeking. The application must be accompanied by a statutory declaration (oath). The Comptroller then considers the matters alleged in the application and, if satisfied that a prima facie case is made out, he directs the service of copies upon the patentee or any other person having an interest in the patent, and also advertises the application in the Official Journal. The patentee or any person may oppose the granting of the license by filing a verified counter-statement or opposition setting forth the grounds upon which the application is opposed. The Comptroller may consider the statements filed and determine from them alone whether the application should be dismissed, or he may require the attendance before him of any of the parties for examination or cross-examination, and the production of books and documents, subject to due precautions against disclosure of information to rivals in trade. The decision of the Comptroller, called "order" in the statute, is subject to appeal to the courts, and in the appeal the Attorney General or counsel appointed by him is entitled to appear and be heard. The Comptroller may, if the parties interested consent or if the proceedings require prolonged examination of documents and investigation, order the proceedings or any questions of fact to be referred to an arbitrator agreed on by the parties or appointed by him. The award of the arbitrator is to be final if the parties consent, but otherwise is subject to the same appeal as the decision of the Comptroller himself. Costs may be awarded by the Comptroller.[16]

The order for the granting of the license may have the specific language of the license attached to it. A different section of the Act, 83A, provides that the order for the granting of a license shall operate as if it were embodied in a deed granting a license executed by all necessary parties, without prejudice to any other method of enforcing the order.[17]

In the twenty years from the passage of the Act in 1919 to 1939, seventy-three applications for compulsory licenses under Section 27 were filed, an average of less than four a year. Of these applications, fifty were withdrawn and abandoned, and a few were dismissed on formal grounds, including the reason that the patent

[15] See STEPHEN LADAS, INTERNATIONAL PROTECTION OF INDUSTRIAL PROPERTY (1930), and EMERSON STRINGHAM, PATENT AND GEBRAUCHSMUSTER IN INTERNATIONAL LAW (1935), for a history of the Convention.

[16] The decisions which have been cited in notes 8-10, *supra,* illustrate various factors in the procedure.

[17] The *Cathro* and *McKechnie* cases, *supra,* note 8, give the texts of licenses.

had expired. Only sixteen applications[18] went to hearing and decision; four were refused, two because no prima facie case was made out; and twelve were granted by the Comptroller, but on appeal he was reversed as to seven of these. The net result is that compulsory licenses were ordered in five applications over a period of twenty years.

The large proportion of withdrawn and abandoned applications probably includes many which were compromised by the parties. In fact, the Patent Office postpones hearings freely to induce settlements.

Several explanations may be offered for the small number of cases which are filed under compulsory-licensing or compulsory-working laws. One argument is that such laws are of little practical value; the need for them is small; the occasion for their application is infrequent; and the proportion of unused patents is not much less, if any, than without such laws. On the other hand, it is argued that the existence of such laws has a deterrent effect on the suppression of patents and prevents patentees from misusing their patents or insisting on unreasonable terms, and that these laws induce compromises between rival parties.[19]

CANADA

In general the patent laws of the British dominions and colonies follow that of England with respect to compulsory licenses and compulsory working, although some have not yet adopted the latest revisions. Thus the law of Australia is similar to the British law as it stood prior to 1919, and a committee appointed to revise the patent statutes in 1937 recommended that the statute be revised in accordance with the British revisions. The laws of New Zealand and the Irish Free State are similar to the British Act of 1919.

The Canadian law (Sections 65 to 71 of the Patent Act)[20] with respect to compulsory licensing is parallel to the present British law; in fact, the Canadian statute uses the exact language of the British statute throughout, except for the differences noted hereafter. The first difference is that in Canada the Attorney General as well as any person interested may apply to the Commissioner. Further, the Canadian statute does not contain provisions with respect to licenses of right. With respect to procedure the Canadian statute provides that the Commissioner may, with the approval of the Minister, refer the whole proceeding to the Exchequer Court of Canada, in which case the decision of the court is final; also any particular issue of

[18] Some of the sixteen applications were considered in groups since the patents related to the same subject matter and the same parties were involved. Actually, there were only seven distinct cases, and the decisions in all of these have been referred to in notes 8-10, *supra*.

[19] British writers are in the main satisfied with the statute and its operation, particularly as a deterrent. However, a recent committee studying the British patent law has recommended rephrasing and broadening several of the grounds on which a compulsory license may be obtained in order to avoid the narrow interpretation placed upon several phrases by the courts, and also adding other grounds. Second Interim Report of the Departmental Committee, Cmd. 6789 (H. M. Stationery Office, London, 1946.)

[20] The Patent Act, 1935, 25-26 GEO. V, c. 32.

fact may be referred to the court for its determination and report to the Commissioner.

The Canadian statute contains a section not found in the British law. This is Section 64, which provides that the Commissioner may at any time require a patentee, or his representative in Canada, or any person who has an interest in the patent, to supply the Commissioner with a statement as to whether the patented invention is being worked on a commercial scale in Canada, the place where it is worked, the names and addresses of the persons by whom it is being worked, and the reasons why it is not worked, if any. The failure to supply such a statement within sixty days is deemed to be an admission that the patented invention is not worked on a commercial scale in Canada.

The present Canadian statute was enacted in 1935. Up to 1942, thirteen applications for compulsory licenses had been filed. Seven applications were withdrawn or abandoned. Decisions were published in five cases; in two licenses were granted, and in three denied.[21]

GERMANY

The provisions of the German Patent Act of 1936, Sections 15(1) and 15(2), in regard to compulsory licensing and revocation, are as follows:

> 15 (1). If the patentee refuses to allow the invention to be used by another person who offers to pay him an adequate compensation and to furnish security in respect thereof, then the latter shall be granted a license to use the invention [a compulsory license] if the Government declares the permission to be warranted for the purpose of guarding the interests of the public and if at least three years have elapsed since the grant of the patent has been published. The license may be limited or made dependent upon conditions.
>
> 15 (2). As far as international agreements do not prevent it, a patent is to be revoked if the invention is carried out exclusively or mainly outside Germany. The revocation cannot be demanded until two years after the legal grant of a compulsory license and only if the Government declares that the interests of the public cannot be sufficiently served any longer by granting compulsory licenses; however, these reservations do not apply in the case of persons belonging to a foreign country which does not grant reciprocity in this respect. The assignment of the patent to another person shall be ineffective if its only purpose is to circumvent the revocation.

Sections 37 through 42 govern the procedure. An action to obtain a compulsory license is instituted by filing a petition in the patent office, stating the facts upon which it is based. The parties are heard, and the costs of the proceedings are charged against them. A direct appeal to the Supreme Court is allowed from the decision of the patent office.

If a prima facie case is made out and a declaration of urgency is furnished by the

[21] The three cases in which licenses were refused involved the same parties. Providence Machinery Co., Ltd. v. Scott and Williams, Inc., 1 Can. Pat. Rep. 281, 289 (Commissioner of Patents, 1939). The two cases granting licenses are: The Celotex Corp., 2 Can. Pat. Rep. 26 (Commissioner of Patents, 1938, *aff'd* Exchequer Court, 1939); E. H. Tate Co. v. Riley, 2 Can. Pat. Rep. 53 (Commissioner of Patents, 1941).

Government, a preliminary license may be granted immediately, subject to the furnishing of security and the subsequent adjustment of damages if the license is not granted by the ultimate decision.

To obtain a compulsory license the petitioner must show that he has requested a license from the patentee, with a suitable offer of compensation and security, and that the license has been refused. The request for a license must be a bona fide one, and the compensation (royalty) and security offered sufficient in view of the nature and value of the invention and the interests and businesses of the respective parties. The refusal of the license may be either express or implied, as by failing to reply within a reasonable time or by a demand of such prohibitive terms as to amount to a refusal. The refusal must be unjustified. The request for a license may be made after filing the petition, but before decision. The petitioner must possess or have available the necessary capital and the necessary ability and skill to use the patented invention. The fact that the petitioner is an infringer is not a bar. It is also necessary to ascertain that it is in the interest of the public that a license be granted—perhaps the most important prerequisite. This question was determined after 1936 merely by the statement of the "government."[22]

The license which is granted is non-exclusive and may be subject to conditions or limitations; it is often limited to the use of the invention in the establishment of the licensee, or to particular devices, or to exporting only; and it may specify minimum sales prices. The fixing of a royalty appears to be a difficult matter. The royalty fixed has ranged generally from 1 per cent to 10 per cent of the selling price in the case of a patented article, although it may be higher. A minimum royalty may be specified and security amounting to approximately the royalties for one year may be required. If the licensee should not use the invention, he would be subject to payment of the minimum royalties if any are specified. The licensee cannot grant sub-licenses, and the license cannot be transferred apart from the business.[23]

The number of actions for compulsory licenses instituted in Germany is somewhat greater than in England. During the eleven-year period from 1924 to 1934, there were 140 petitions under the law prior to the 1936 Act. During this same period, 87 were withdrawn, 44 refused, and 17 granted. Fourteen were granted from 1911 to 1925. Thus only a fraction over one license per year had been granted prior to the 1936 law. Since then the number of applications filed and granted has been somewhat higher.[24]

THE FRENCH LAW

France has not enacted a compulsory-licensing law. Article 32 of the patent law

[22] This means the cabinet minister at the head of the department. His statement will govern all further action in the case. Klauer, *The New German Patent Law*, 18 J. PAT. OFF. SOC'Y, 481-492 (1936).

[23] See commentaries on the German Patent Law: for example, ISAV, PATENGESETZ (fifth ed. 1931); KRAUSJE, DAS PATENGESETZ (1936); LUTTER, PATENGESETZ (1928).

[24] The German patent office ceased functioning at the end of hostilities and has not yet resumed operation. Actions for compulsory licenses were abolished by decree in 1942.

of 1844 provides that the patentee who has not exploited his invention in France within two years from the grant of the patent, or who has ceased the working for a period of two years, shall be deprived of his rights, unless proper excuse for the inaction is shown. The text of this working provision has not been substantially revised since it was first enacted, except that the minimum period for beginning working has been changed to three years for citizens of countries which are members of the Convention.

By Article 34 of the French law any interested person may institute an action to revoke a patent. Such an action must be brought in the civil courts. By Article 37 the public minister must intervene for the revocation to be made absolute.

The number of actions instituted is not known, but appears to be comparatively small. Since the enactment of the law over a hundred years ago, there have been published a little over one hundred decisions of the courts in actions under it.

The statute uses the word "exploit," which has been interpreted as meaning actual manufacture. It is not necessary, however, that all modifications or variations, or all applications, of an invention be worked. Since the statute uses the words "the patentee who has not . . . ," the working must be by or for the patentee, or by his licensee; working by an infringer will not avoid forfeiture of the patent. The existence of a prior patent which would be infringed will justify non-working until after the prior patent has expired unless it, or a license under it, could be readily acquired on reasonable terms.

In 1930 France ratified the Hague amendment to the Convention, which provided that a patent could not be revoked for non-working unless compulsory licenses were insufficient to eliminate the failure to use the invention. No compulsory-licensing law has been enacted in France, and there has been considerable difference of opinion as to whether or not revocation of patents for non-working has been abolished. Different views have been expressed by different courts. The difficulty has been met in some cases by a more lenient treatment of the excuses for failure to work the invention, and in others by holding that the patent could not be revoked. Various proposals have been made for revision of the French patent law by substituting compulsory licenses for revocation of the unexploited patent.

OTHER COUNTRIES

Compulsory-licensing laws in general have replaced laws providing for revocation of patents for non-working, mainly due to successive revisions of the International Convention for the Protection of Industrial Property. The latest revision, that of London in 1934, provides that no compulsory license can be demanded until three years after the grant of the patent and unless the patentee fails to produce adequate excuses. The patent cannot be revoked unless (1) a compulsory license has been issued, (2) the granting of compulsory licenses is insufficient to prevent abuses, and (3) the action to revoke the patent is instituted at least two years after the grant of

the first compulsory license. These conditions obviously reduce the revocation of patents for non-working practically to the vanishing point.

No other country has such well-developed laws as those of Great Britain and Canada, and the laws of countries which are parties to the International Convention are in most instances restricted as required by the Convention. The provisions vary considerably. In most, non-working of the invention in the country is the sole ground mentioned. Some laws provide for the grant of a compulsory license to the owner of a dependent (improvement) patent of commercial importance, but the owner of the first patent is then also entitled to a license under the second patent.[25]

A number of countries still have compulsory-working laws without any compulsory-licensing enactments.[26] The period within which the invention must be worked is usually two years, although one, three, four, and five years, and other periods, are found. Interruption of working for similar periods also has the same results. While working usually means actual manufacture in the country, this is not the case in many of the countries in this group. The working or exploitation may be purely nominal, as by advertising or by exhibition of the invention, while in a few the working in other countries may suffice. A few countries do not have any working requirement or other provision of a similar nature in their patent laws.[27]

OFFERS TO GRANT LICENSES—"LICENSE OF RIGHT"

In many countries which have compulsory-working laws, particularly the smaller countries and those of less industrial importance, the requirement to work the invention in the country may be satisfied in a purely nominal manner—even by merely advertising an offer to grant licenses.

In 1919, England introduced a provision to encourage and regulate public offers to grant licenses. Section 24 of the British statute provides that a patentee may, at any time after the patent is sealed, apply to the Comptroller to have his patent endorsed with the words "licenses of right." When the patent is so endorsed certain results follow.

The first and most important result is that any person is thereafter entitled to a license under the patent as a matter of right. The terms of the license may be settled by agreement of the parties, but if an agreement cannot be reached, the terms may be settled by the Comptroller on application by either party.

The statute directs the Comptroller, in settling the terms of any license, to be guided by several considerations. First, he must, on the one hand, endeavor to secure the widest possible use of the invention in the United Kingdom consistent

[25] No attempt will be made to set forth the patent laws of all countries with compulsory-licensing or compulsory-working provisions. Among those with compulsory-working and compulsory-licensing provisions are: Austria, Belgium, Bolivia, Brazil, Bulgaria, Cuba, Czechoslovakia, Denmark, Finland, Greece, Guatemala, Holland, Hungary, Iceland, Italy, Japan, Luxemburg, Mexico, Norway, Paraguay, Poland, Russia, Spain, Sweden, Switzerland, Uraguay, and Yugoslavia.

[26] Argentina (1864), Costa Rica (1896), Dominican Republic (1911), Ecuador (1928), Honduras (1919), Iraq (1935), Iran (1931), Nicaragua (1899, 1926), Panama (1908), Peru (1869, 1914), Portugal (1894), Rumania (1906), Turkey (1880), Venezuela (1927).

[27] These are: Chile and Colombia (working laws eliminated in 1925); Haiti; Lithuania; Salvador (but a patent may be expropriated).

with the patentee's deriving a reasonable advantage from his patent. Second, on the other hand, he must endeavor to secure to the patentee the maximum advantage consistent with the invention's being worked by the licensee at a reasonable profit in the country. Third, the Comptroller must also endeavor to secure equality of advantage among several licensees, and for this purpose may reduce the royalties in any previously granted license. The Comptroller must take into account any work done or outlay incurred by any previous licensee in developing the invention on a commercial scale.

The license may preclude the licensee from importing into the country. The licensee is entitled to call upon the patentee to proceed against infringers, and if the patentee refuses or neglects to do so, the licensee may sue in his own name, making the patentee a party defendant.

The second result which follows from the endorsement of a patent with the words "licenses of right" is that no injunction can be obtained against an infringer who is ready and willing to take a license upon terms to be settled by the Comptroller, and the damages recoverable from such infringer cannot exceed twice the amount he would have had to pay under a license. This provision, however, does not apply when the infringement consists in the importation of infringing goods.

The third result is that the annual fees or taxes payable on the patent are reduced by one-half.

If there is a patent of addition, the endorsement of either it or of the main patent carries with it the endorsement of the other.

When a request to endorse a patent is made, it is advertised in the Official Journal, and the Comptroller must satisfy himself that the patentee is not precluded by an existing contract from making the request. A preexisting non-exclusive license is not a bar. Any person may oppose the request if it is contrary to a contract in which he is interested, and if the allegation is true the request will be refused, or the endorsement will be cancelled if already made.

When the endorsement is made it is entered on the register of patents and published in the Official Journal; it may also be published in such other manner as may seem desirable for the purpose of bringing the invention to the notice of manufacturers.

The patentee may apply to have the endorsement cancelled on payment of the unpaid fees or taxes. Existing licensees must consent to the cancellation, and any person may oppose an application for cancellation.[28]

Any decision of the Comptroller may be appealed to the courts.

During the nineteen years from 1921 to 1939, the number of patents endorsed averaged 690 per year, which is about 4 per cent of the average number of patents granted each year. During this same period the number of applications to cancel endorsements averaged seventeen per year. There were twenty petitions to settle the terms of licenses during this period. The disposition of these petitions is in-

[28] The only decision of the Comptroller under Section 24 appears to have been on an application to cancel an endorsement, Serenyi's Patent, 55 Rep. Pat. Cas. 228 (Comptroller, 1938), which was granted.

teresting: one was suspended at the request of the parties the same year it was filed; five were withdrawn or abandoned the second year after they were filed; one was withdrawn the fourth year after it was filed; one was pending during the fifth year after it was filed, when the patent expired; seven were still pending the sixth year. The ultimate disposition of these and five others is not stated in the reports.[29]

There is some difference of opinion as to the value of the "license of right." On the one hand the procedure gives a public and official record of patents which the owners are willing to license to anyone; it gives the services of a government official and of the courts in settling disputes as to terms; and it enables a patentee to escape part of a heavy burden of fees or taxes. On the other hand it is said that only patentees who are unable to license their patents, or to utilize them in any other way, request the endorsement.

The German patent law of 1936 contains a section similar to the section of the British patent law just described. According to Section 14 of the German law, any applicant or patentee may file in the patent office a declaration that he is willing to permit anyone to use the invention in return for adequate compensation, whereupon the annual fees or taxes (which are much higher than in England) are reduced by half. The declaration is irrevocable, and cannot be made if an exclusive license is recorded. Any person thereafter intending to use the invention must give notice of his intention to the patentee, stating the manner in which the invention is to be used. He is then entitled to use the invention in the manner indicated, and must account to the patentee quarterly and pay the compensation. On default in meeting this obligation the patentee can forbid any further use of the invention. The compensation, on written petition of either party, is fixed by the patent office without right of appeal. After one year from the fixing of the compensation either party may petition for revision if conditions have arisen or become known which make the established royalty unsuitable. During the four years 1937 to 1940 an average of 860 declarations per year were published, which is almost 6 per cent of the average annual number of patents granted in those years.

GENERAL COMPULSORY LICENSING

Thus far, the term "compulsory licensing" has been limited to the granting of a license by a government agency on some default or dereliction of the patentee. When the public interest is considered, the failure to grant licenses itself may constitute a default or dereliction, and in this respect the definition may be somewhat too narrow.

In recent discussions in this country, the proposal has been made that all future patents be made available for use by anyone who may desire their use and who is willing to pay a fair price for the privilege. This may be called "general compulsory licensing" as contrasted with compulsory licensing as here considered, which has been called "restricted compulsory licensing." "General compulsory licensing"

[29] The British statute was adopted in Australia, New Zealand, and the Irish Free State, but not, it should be noted, in Canada. Greece in 1920 and Bulgaria in 1921 adopted simple provisions for the declaration and publication of offers to grant licenses.

would result in a patent which is not a patent in the sense that the concept of patents for inventions has been hitherto considered, that is, the grant of the exclusive right to an invention.

While such pseudo-patents, so to speak, are not granted by any country, there are a number of situations in which, for reasons of paramount public interest, the inventor is not granted, or is deprived of, the exclusive right to his invention, either generally or for certain purposes. The principal examples are the use of an invention by the government, the case where a particular patent is expropriated or declared in the nature of a public utility by some governmental procedure, and the case where a particular class of inventions is set aside by statute as being peculiarly affected with such a public interest that special regulations are required.

The laws of practically all countries, although differing in form, provide that any patented invention may be used by the government without the consent of the patentee, on payment of compensation. The war emergency legislation of the United States, Great Britain, and other countries, both in the first and in the second World Wars, has also provided for the general granting of licenses under enemy-owned patents as well as for the seizure of such patents.

A number of countries have statutory provisions for the expropriation or withdrawal of patents when such action is considered necessary in the public interest or for the public welfare. By this is meant not expropriation for the use of the government, since use by the government may be otherwise provided for, but expropriation for general use. The right of the patentee to compensation is always protected. The expropriation is ordinarily accomplished by the "government" or an administrative body, but the matter of compensation may be taken to the courts in the event of disagreement. Some of the statutes do not specify any procedure, others refer to general laws relating to expropriation of property by the government, while a few contain elaborate details. Examples of the application of these laws are not available. In all likelihood they are seldom utilized.

In Europe such laws are found in Austria, Bulgaria, Denmark, Finland, Greece, Holland, Italy, Norway, Poland, Russia, Spain, Sweden, Switzerland, and Yugoslavia; in Latin America in Bolivia, Brazil, Mexico, and Salvador. In some of these countries it is not clear whether use of the invention by the state only is intended.

The Swedish law of 1884 provides that if the King considers it necessary that a patented invention shall be open to the free use of the public, the patent may be expropriated on payment of full compensation to the patentee. If the compensation cannot be agreed upon, it is determined by a special jury according to the procedure for condemning land required for public purposes.

The Danish law of 1894 and 1936 states that, when the public interest demands, a law may be enacted declaring a patent lapsed so that the invention becomes available for free use by the public; compensation is to be paid by the state, and in the event of disagreement the amount is determined by a board of arbitrators appointed as specified in the patent law. In Spain also the patent can be expropriated by a special law, which also fixes the compensation.

The law of Greece of 1920 provides that the Council of Ministers may decide, and the King by decree declare, that a particular patented invention is a public utility, and thereafter the patentee must grant licenses, or licenses may be granted by a Minister, subject to compensation to be paid by the licensees. In default of agreement the compensation is fixed by the Ministry or by the courts. The annual taxes to be paid by the patentee are in this case reduced to half. The Bulgarian law of 1921 is to the same effect.

Some statutes have made specific provision for the general granting of licenses in the food and drug field. A provision was added to the British statute in 1919 (Section 38 A (3)) that, in the case of any patent for an invention intended or capable of being used for the preparation or production of food or medicine, the Comptroller may grant to any applicant a license limited to the use of the invention for food or medicine. The license need not be granted if good reason to the contrary is shown. In settling the terms of the license the Comptroller is directed to consider the desirability of making the food or medicine available to the public at the lowest possible price consistent with giving the inventor due reward for the research leading to the invention. The ruling of the Comptroller is subject to review by the courts.[30]

A provision identical with that of the English law is found in the laws of Canada, Australia, New Zealand, and the Irish Free State.

While there is no statute with respect to compulsory licensing in the United States, other than the special provision in the Atomic Energy Act,[31] there are a number of situations in which, in effect, compulsory licenses are granted. First, there is the right of the Government to use any patented invention with payment of compensation to the patentee.[32] Second, there are some situations in which individuals are held free of liability under a patent, as in the case of intervening rights arising under reissued patents and the third-party rights protected by the Act making special provision for conditions arising from World War II.[33] Third, the courts may, after finding a patent valid and infringed, nevertheless deny an injunction, thus permitting the defendant to continue using the invention, if the patentee can be compensated by money damages and if an injunction would be against the public interest or would unduly and adversely affect the defendant.[34] Fourth, if the patentee has been misusing his patent the court may deny all relief, thus permitting the defendant and anyone else to use the invention without liability. Fifth, a court may, in a suit for violation of the antitrust laws involving patents, order the patentee to grant licenses to anyone who may apply, on payment of reasonable royalties.[35]

[30] Only two applications for licenses appear to have been made under this section: In the matter of Schou's Patents, 41 Rep. Pat. Cas. 298 (High Court, 1924), (denied); Glazo Laboratories, Ltd., 58 Rep. Pat. Cas. 12 (Comptroller, 1940) (granted). The report referred to in note 19 recommended elimination of this provision from the law as being unnecessary in view of the other provisions with respect to compulsory licensing.

[31] 60 STAT. 768, 42 U. S. C. A. §1811 (Supp. 1947).

[32] 36 STAT. 851 (1910), as amended, 35 U. S. C. §68 (1940).

[33] 60 STAT. 940, 942, 35 U. S. C. §§101 and 103 (Supp. 1947).

[34] City of Milwaukee v. Activated Sludge, Inc., 69 F. 2d 577 (C. C. A. 7th 1934).

[35] *See* Hartford-Empire Co. v. United States, 323 U. S. 386 (1945), and United States v. National Lead Co., 332 U. S. 319 (1947).

THE PATENT PROFESSION AND THE GENERAL LAWYER

ALBERT S. DAVIS, JR.* AND HAROLD T. STOWELL†

The term "patent profession" will be used in this discussion in a very broad sense to designate those professionally engaged in the legal aspects of the procuring and evaluation of patents. As thus used it includes several more or less readily distinguishable groups, which may be defined, possibly somewhat arbitrarily, as follows:

1. Lawyers principally engaged in patent litigation and problems ancillary to such litigation;

2. Lawyers principally engaged in the solicitation of patents and problems ancillary to such solicitation;

3. Non-lawyers engaged in the solicitation of patents and problems ancillary to such solicitation.

The term as used herein does not include a group which may be designated as "patent engineers," who typically are technically trained non-lawyers engaged, usually as employees of corporations, in acting as intermediaries and interpreters between the inventors and those directly engaged in soliciting or litigating patents, nor does it include "patent experts," who typically are technically trained non-lawyers engaged, usually on a per diem basis for a particular case, in assisting with the technical-legal problems arising in patent litigation, and occasionally also in patent solicitation.

The first two groups listed above may be designated jointly as "the patent bar." It would be unrealistic to consider these as sharply distinguished groups analogous to the barristers and solicitors of the English system. All of the lawyers engaged in the solicitation of patents may, and many, if not most, of them do, at least occasionally, participate in patent litigation, either as principal or as associate counsel. On the other hand, most lawyers engaged principally in patent litigation are associated with firms which handle the solicitation of patents and are, at least occasionally, consulted in the problems arising in such solicitation. This lack of sharp dichotomy between those engaged in patent litigation and those engaged in patent solicitation is highly desirable, as it clearly tends to improve the soundness and strength of the

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patents obtained if those engaged in solicitation have a continual direct contact with the difficulties and problems arising in patent litigation.

It may be contended that the exclusion of "patent engineers" and "patent experts" from the scope of the term "patent profession" is arbitrary, and we would not quarrel with those who would include these groups in that term. Certainly neither group can eliminate the legal aspects from the problems on which they are engaged. Their opinions and their advice, even though based on scientific or technical data, would have little value in many cases if those rendering the opinion or advice were not intelligently aware of the legal background in which the opinion or advice is to be used. In fact, it must be acknowledged that many experienced patent experts discuss the legal aspects of such questions as anticipation and infringement on at least an even footing with skilled members of the patent bar.

On the other hand, we feel that there are many lawyers who would quarrel with our inclusion of the group of non-lawyer patent solicitors in the term "patent profession," and to this issue we must devote more detailed consideration as it is an issue with a considerable background and of substantial importance. As to the questions raised by this issue we wish to express a hope and an opinion: the hope that the questions will not be answered arbitrarily or on the basis of emotion-charged catch-phrases, and the opinion that the questions are in process of being answered rationally by a combination of intelligent administrative policy in the Patent Office and the inevitable effects of the trend towards increased specialization. To be specific, we believe that the patent solicitor of the not-too-distant future will be required to be, as the typical patent solicitor of today increasingly is, equipped with both an adequate technical training and an adequate legal training. The steady trend toward a more rigorous standard of qualification for enrollment in specialized and administrative practice bars is not peculiar to the patent profession, but is a widely occurring development ranging all the way from Treasury representation to the federal district courts.

The Commissioner of Patents has long had the authority[1] to "prescribe rules and regulations" for the recognition of persons representing applicants and other parties before the Patent Office, and to exclude from practice before the Office any person shown to be incompetent, disreputable, or guilty of gross misconduct. Prior to 1934 admission to the register of "attorneys" was granted upon written request accompanied by a showing that the applicant possessed "the necessary legal and technical qualifications to enable him to render applicants for patents valuable service." Normally the Commissioner required a showing of a period of practice in preparing and prosecuting applications for patent under the supervision of a registered patent attorney or, in lieu thereof, a sufficient period as a member of the examining corps of the Patent Office.

In 1934 the Commissioner of Patents inaugurated the examination system for determining whether applicants for registration as patent attorneys possessed "the

[1] REV. STAT. §487 (1875), 35 U. S. C. §11 (1940).

necessary legal and scientific qualifications." These examinations are conducted under the auspices of the Civil Service Commission. They are by no means perfunctory: of sixty-one candidates taking the first examination, only seventeen passed. It is understood that the proportion passing subsequent examinations has been somewhat higher, which is probably due to more serious preparation on the part of the candidates.[2]

Since November, 1938, a distinction has been made on the Patent Office register between lawyers and non-lawyers, the former now being enrolled as "attorneys" and the latter as "agents."

Perennial attempts have been made, continuing to the current session of Congress, to obtain the passage of legislation which would restrict all practice before the Patent Office to members of the general bar, or alternatively would admit all members of the general bar to such practice without further qualification. It is the considered opinion of the writers that both of these proposals are unsound. Non-lawyer patent attorneys have a long and honorable record of service to inventors seeking patents on their inventions. Typically, they bring to this service a background of scientific and technical training and experience which is invaluable to their clients. The recurring proposals to bar such individuals from further service in their profession are repugnant to American principles, and it is not believed that Congress will accede to them. Nevertheless a time will probably come, through the natural processes of selection and evolution, when further enrollment on the register of those entitled to practice before the Patent Office may be restricted fairly and properly to lawyers who possess the necessary scientific qualifications "to render applicants for patents valuable service."

The trend toward an eventual Patent Office register limited to lawyers is clearly indicated by the character of recent enrollments. In the three successive three-year periods since lawyers and non-lawyers were first separated on the register, the proportion of lawyers among those enrolled has been 47 per cent, 52.5 per cent and 57.5 per cent.[3] This steady and substantial increase in the proportion of lawyers is significant, and indicates an evolution in a desirable direction.

The control exercised by the Commissioner of Patents over the methods of practice and the actions of patent attorneys has been persistent and, when occasion has demanded, vigorous.[4] The cited case illustrates the disbarment procedure in the Patent Office under existing statutes. Without belaboring the much-debated question of the advertising agent as against the non-advertising attorney, we believe that both the means of preventing and correcting any possible abuses, and a willingness to do so, are apparent.

The training of the patent profession in the special techniques and peculiar problems presented by patents and inventions is commonly obtained today by

[2] Questions from the first of these examinations were reproduced in 17 J. PAT. OFF. SOC'Y 259-261 (1935).

[3] Based upon annual registrations of attorneys and agents, 1939-1947.

[4] Hatch v. Ooms, 69 F. Supp. 688, 72 U. S. P. Q. 405 (D. D. C. 1947).

actual practice in the offices of patent lawyers, in the patent departments of the larger corporations, or in service as a member of the examining corps of the Patent Office. Academic courses in the law schools, in general, do not in point of fact offer much in the way of specialized training for this profession. The curriculum for the specialist in patent law should include such courses as substantive patent law, Patent Office practice (with patent interference practice preferably treated in a separate course), trade marks and unfair competition, copyright law, patent contracts (it cannot be assumed that the law school course in contract law is in any sense an adequate preparation for the drafting and interpretation of contracts and agreements relating to patents), and patent litigation (including declaratory judgment procedure, which is today a substantial branch of the law of patents).

As a matter of fact, however, the courses in patent law subjects offered in most law schools today would be of more ultimate value to the prospective general lawyer, who rarely elects to take them, than to the prospective patent specialist. The patent specialist gets his patent law training elsewhere; the general lawyer, unfortunately, does not even get an adequate understanding of the basic special principles necessary properly to advise his clients in situations involving patents and inventions. In general, he feels lucky if he knows of a patent lawyer to whom he can turn for counsel in such a situation, or to whom he can refer the matter.

When presented by his client with a memorandum of invention requiring patent protection, the general lawyer will refer the case to a member of the patent bar. The rules force him to do so, even if good judgment would not. Only a minority of patent matters, however, involve the actual prosecution of patent applications or even a decision on whether to file. Indeed, it may be said properly that a good deal of the art of patent practice depends on ability to decide when a knowledge of substantive patent law is required. It is in that precise zone of decision that legal representation can be most useful, and is often most deficient.

Much of the practice of a young lawyer in his own office, for instance, consists of organizing small, closed corporations. A surprising number of these corporations plan to go into "kitchen-sink" manufacturing, rather than retailing, wholesaling, or the service trades, for the tradition of the Yankee inventor is still strong with us. It follows in many cases that the availability of patent protection (and its proper contractual safeguarding and management) is such a corporation's strongest point, for it cannot compete with established rivals on the score of established customer lists, sales and promotion budgets and personnel, or distribution techniques. Save in the rarest cases, such a young lawyer cannot give competent advice as to the preservation, enlargement, and management of a patent property. In the rare event that he has taken a law school course in patent law, it will for the main part have been confined to patentability and procedural matters; and even in the unlikely event that it has involved management matters, it cannot possibly have given him negotiative experience.

Now this difficulty is not at all confined to such representation. The average

well-established law firm in our larger cities, with four or five partners and a half-dozen associates and clerks, usually boasts a "horse-trader" of some deserved reputation. Negotiations involving applied patent law, however, are just as likely as not to involve the trading of zebras. In five years, for instance, such a firm might have presented to it typically the drafting of a contract for the acquisition of apparatus using materials compounded and renewed from time to time by a secret process where the vendee may service the apparatus it buys but must preserve the secret; reporting for foreign funds control and the alien property custodian of domestic and foreign patents, applications, and contracts relating to them; merger of a corporation manufacturing a patented article which is involved in a chain of defensive and aggressive infringement suits; bankruptcy of a corporation whose entrepreneur has put into it patents to which he has tied a string; a client's wish to go into the business of manufacturing a game which is only debatably patentable but should have great novelty impact; a half dozen sales-contract and purchase-order forms with differing patent indemnity clauses; and an intestate estate in which the principal assets are a patent application and a memorandum of invention. Each of these, for efficient disposition, would require adequate knowledge of substantive patent law.

How will they be dealt with in ordinary routine? The majority of the firms presented with them will educate a partner, more or less hastily, in the broader legal implications of the situation at hand, and in addition will probably see to it that an associate spends a good deal of time deciding what points are likely to be of importance and on what considerations they may turn. Examination of case law or treatises such as *Corpus Juris* is of little help; instead, principal reliance will be placed on textbooks such as Ridsdale Ellis' *Patent Assignments and Licenses,* or non-legal materials such as Berle and de Camp's *Inventions and Their Management.* This, of course, does not mean that any competent general attorney is going to be guilty of such a legal howler as imagining that assignment of an undivided one-third interest in a patent saddles the assignee with the duty of accounting for one-third of his profits. It suggests very strongly certain weaknesses in many directions, however. As an example, consider the problems implicit in the need of selection among (a) minimum royalties, (b) a simple due-diligence clause, (c) a requirement of investing and keeping invested a certain amount of capital, (d) a men-money-time clause, or (e) a requirement that X units for Y months be produced, as alternative means of preventing shelving, assuring production, and securing royalties. The problem is even more apparent in cases involving negotiations more dependent on peculiar and fluxing rules of law, such as licensees' covenants to respect validity.

The other alternative open to the general lawyer on negotiative and management matters is to consult with or forward to a patent specialist. Putting aside the fact that it is usually somewhat more expensive for the client thus to be doubly represented, there is always something lost in an attempt so to transmit the subtler nuances of a client's wishes. Again, should drafting and negotiations be taken over by the patent specialist in direct collaboration with the client, much of value, that the

general lawyer is in an unusually good position to contribute from his own fund of corporation, tax, and contract experience, may be sacrificed.

Still another facet of the problem is presented by the patent specialist himself. Many members of the patent profession, of course, tend far more to be experts in soliciting—the procedural and Office techniques of prosecution—than in what, for want of a better phrase, might be called applied commercial patent law. Within the last year the president of a large corporation whose competitive advantages and commercial position are largely dependent on patent protection, licensing, and being licensed by others, commented to one of the writers that his patent department was unskilled in the realities of negotiation, though unusually apt in prosecutions.

There is, of course, nothing new in pointing to the fact that the most serious deficiency in young attorneys is lack of practical experience. It has plagued the bar, the law school, and the client alike since the substitution of the law school for the apprentice system of "reading law." When we turn to any field complicated by the incidence of special substantive law, whether it be patents, admiralty, or administrative law, the difficulty is emphasized. What sets aside the field of applied patent law as unusually perplexing, however, is that it commonly brings within its scope a great number and variety of clients having little knowledge or appreciation of the day-to-day impact upon them of its legal effects. In admiralty, for instance, the client is likely to accept the law peculiar to him from common knowledge in his special field of business. The average man or company affected by the patent law learns of it, in most cases, only when he is forced to. For that reason, the patent lawyer, in negotiative matters, has a rather heavy burden to bear.

The skilled patent lawyer, then, may well see fit to educate his client to some extent in the general philosophy of patent law. But *quis ipsos . . .*?

How can the general lawyer be trained to an understanding of the special substantive law of patents which will be useful to him and his client? How can he acquire negotiative skills based on that understanding? And is such double training likely to be a sufficient answer to the larger problem?

To deal with the last question first, it is not too easy to see on a pragmatic basis any sound objections to such training, if it can be adequately accomplished. It is over-ingenuous to argue that the general lawyer will, after picking up a smattering of knowledge, sacrifice his client's interests by relying too much on his own untested resources. If he is of such a temperament, he will make the blunder anyway on the basis of a bookshelf. He cannot forever have the skilled patent lawyer in close association with him, and some questions demand an answer without reference. A client accepting a lucrative rush purchase order with a twenty-line fine print clause on the reverse headed "Patent Indemnity" is in no mood to be told that an answer will be sought by long-distance. Yet if the client goes to the patent lawyer in the first instance there is a substantial possibility that he will miss what assistance the general lawyer could give him from his own fund of specialized knowledge, or fail to combine the two threads of counsel properly.

As has been intimated, the problem of such special training is not peculiar to patent law. All application of legal knowledge, what one may call the task of the counselor rather than the attorney, is and must be on the ground of experience.

Does the answer lie with the law schools?

In other fields, notably in corporation law, pleading, and appellate practice, the law schools have struggled to give their students more than an academic knowledge of legal rules. Justice Douglas' and Professor Foster's classes in "Business Units," and Judge Arnold's "Judicial Process," both at Yale, are excellent examples, in widely divergent studies, of successful attempts to develop the strategic and evaluative techniques of law from an examination of their factual application. Such attempts necessarily remained one step away from the brutal need and nervous factual impact of actually making decisions; they rather showed how and why decisions were made. Moot court work, whether appellate or trial, is a time-honored method of letting the student reproduce his future activity. More lately the law schools have got down to actual cases and by collaboration with legal aid societies and practicing lawyers have started to give back to the student the apprenticeship lost so long in the emphasis on the case system of instruction and the replacing of required clerkship by the earning of a degree in law.

It is most unlikely, however, that the law school curriculum has more than a slight chance of being adapted to such training purposes. The combination of instruction in the standard subjects, practical courses in applied law such as those dealing with corporate reorganization, training of a less academic flavor, and cramming for and against bar examinations (including local practice courses) simply does not leave enough time, for one thing. For another, not one student in twenty has the slightest intimation that he will ever have anything to do with patents. Patent law, even Patent Office patent law, seems fated to remain a curricular step-child, like municipal corporations and international law, in most law schools.

But beyond and above this is the sheer difficulty of obtaining the necessary clinical case material on the practical level. What we are concerned with is analyzing business situations involving patent matters and requiring the selection of one of several decisions. Applied law available to the student usually deals with small stuff. No executive with major responsibilities is particularly anxious or even willing to admit students to the arcana of his business deliberations. Even if names and over-revelatory facts are omitted or disguised and the cases taken at second-hand, the patent attorney will feel substantial compunction against disclosing what is going on in his client's affairs, and especially those neat points and equilibrations on which his decisions will turn. Except in our larger cities, patent attorneys are not overnumerous, and those who have had broad negotiative experience are relatively rare. Finally, the law student usually lacks the general foundation of business or applied legal experience which is the basis necessary for training in any more specialized field involving negotiative techniques.

A somewhat different picture results when such a course is presented on the graduate level. Something may be said for a substantial attempt to enlist non-lawyers among the students, or to present it in the school of engineering, technology or business administration. Unhappily, the substantially valuable experience and comment which are then added from the side of the businessman, the technician or the inventor, are often counterbalanced by the necessity of spending too much time along the way educating them in the legal minima which are really side-issues in patent deliberations. One or the other of us, for instance, in his experience with such courses, has found himself diverted to attempting hurried outlines of the law of bilateral as against unilateral contracts, implied agency, declaratory judgments, and questions arising from express as distinguished from implied warranties of title. It must be frankly admitted that as yet no academic graduate course in applied patent law is or seems likely soon to be in a position to pick its students on a basis of anything but mental ability, and it is highly questionable whether selection on any other grounds would not largely defeat the very purpose of such a course. Yet a course of such scope is likely to get into the difficulties implicit in attempting to be all things to all men.

The last and most promising possibility is the professional seminar or clinic, in which such strides have been made by the Practising Law Institute during the last few years. Here the basic idea has been to make available to the lawyer the experience of specialists in various fields, directed towards the broader philosophy of the speciality, the cogent turning points in it which are more commonly of importance to the non-specialist who is pitchforked into the field, and recent developments which are apt to change the recognized criteria of consideration and decision. More recently the emphasis on and value of such seminars in general has been given tremendous impetus by the correlated development of veterans' refresher courses. Thus far all such work has tended largely in two direction: bread-and-butter lines singularly subject to know-how, such as title reading and probate practice, and such rapidly expanding or shifting fields as administrative law, income taxes, and labor relations.

The Practising Law Institute of New York has, however, actually presented some more or less exploratory courses in applied patent law with what seemed to be favorable results.

The most obvious advantage of such a seminar, of course, is that is is primarily composed of mature lawyers who not only realize the professional doubts and difficulties which have led them to take it, but possess sufficient experience to fit it into their day-to-day routine. The atmosphere of master and student can be arrested almost entirely, and where the attendant is as capable as the lecturer of contributing factual situations for analysis and suggestion, the whole examination of the law "gets down to cases" a lot more quickly than would be possible in any other intellectual climate. Again, the average member of such a seminar will be in the habit of handling fresh situations by the application of past actual experience, and will there-

fore be in a position to project the seminar's conclusions into future useful application.

It is rather out of character, in speaking of the possible content of such a seminar, to talk of "courses." The subject matter, however, should in our opinion differ rather widely from what we have suggested as a proper educational background for entry into the patent profession. In the first place, only the broadest outline of the technique and procedure of Patent Office practice is necessary. While some time can be devoted profitably to the theory of claim reading and dominating-dominated coverage situations, such material as technical patentability, the semantics of claim drawing, Markush and genus-species practice, and sub-combination claims may also well be ignored. Instead, once the general idea of what a patent solicitor tries to do has been implanted, the seminar could more profitably consider the trade secret and its interrelation with the legalistic protection afforded by a patent, largely developed through the trade secret's own legal weakness. This in turn would lead into consideration of the weaknesses of patent protection, both in the light of recent politico-economic trends, and as an adjunct of over-patenting and over-manipulation for various reasons, good or bad, of the essentially simple monopoly which is the classic and intended core of the patent.

The real meat of such a seminar, however, as we have already indicated, would be a broad study of the various types of agreements by which patents are protected or bartered away (depending on what terminology one chooses to apply), followed by more detailed examination of their commercial incidents. We would suggest that this examination not proceed seriatim through the catalogue of license clauses—preamble, licensed patent, licensing clause, royalty, and the like—but rather on a basis of "Here is John Doe, with a patent on a cheap, efficient carpetsweeper. He plans to license it exclusively to a manufacturing company, formed for that purpose by a parent corporation of a rather speculative character whose primary experience has been in merchandising packaged apparatus put together from sub-assemblies. What does he have to worry about, and what protective steps should he take? At what points should he give a little; where should he stand firm?"

If the seminar lecturer is adroit, one or two discussions along these lines will open the floodgates to a spate of the members' actual and anticipated problems. There are certain difficulties in this, of course, for nothing is so discouraging as meeting the "free rider" who is glad to have a consultation without the pain of paying a fee. Proper management can avert this, however, and the presentation of actual problems is certainly the most useful method of getting to the heart of the subject.

Assuming that the seminar ever gets past this point, in its allotted span of evenings (and in all seriousness it is not too likely to), it might then turn to the growing field of patent relations between the government and the patent-holder or licensee, for government contract patent clauses, royalty agreements and unofficial

renegotiations, and even international patent relations are still of cogent importance in our scheme of things, despite the cessation of actual hostilities.

Such a program possesses sufficient flexibility to adapt it to the uses of the bar in almost every locality having a local bar association or even an interested group of general lawyers.

It will not, of course, create another branch of the patent profession—it will not even materially reduce references and special retainers where they are really called for. On this score, we need only as an example point to the immensely complicated negotiative situation where a patent or application which must be licensed is involved in an interference or is seriously dominated. On the other hand, we feel that it offers the best hope of bringing home to the general lawyer a very real and widely unrecognized set of professional responsibilities.

GOVERNMENT POLICIES RELATING TO RESEARCH AND PATENTS

JOHN A. DIENNER*

This inquiry, concerning the policy to be pursued by the Government in respect to patent rights arising out of Federal research, necessitates an examination of the antecedents out of which the immediate question arises. Then we should examine the alternatives as to policy which are open to us to adopt, and the probable consequences of any policy recommended.

It appears to be the consensus of those concerned that the policy of the Government is not uniform and is not stabilized. The Attorney General has recommended, in his recent Report,[1] that a stable policy, uniform throughout the various Government departments and agencies, be adopted.

The policy he recommends is, in effect, that wherever Government money has partly or wholly financed the activity in the course of which the invention is made, the invention should be assigned to the Government and patented by it, and the patent thrown open, free, to the people of the United States.

There have been large-scale expenditures of funds in war-stimulated development programs in the recent past. This has already produced startling changes in some parts of our economy,[2] the full extent of which we do not realize. There are projected large-scale expenditures of funds through establishment of a National Science Foundation for research *presumably* on a peacetime basis. This also is likely to affect industry both widely and profoundly.

So now we are faced with the possibilities flowing from two related proposals, namely, that the Government will henceforth conduct scientific and industrial research and development on a vast scale, and the patents that will be granted on the inventions and discoveries thereby made will be taken over by the Government and thrown open, free, to the people of the United States. Does that mean that effective patents in the hands of private persons will be in only those remote corners and hedgerows of industry which the Government regards as wholly unimportant scientifically, industrially, or politically? It looks as if we are going to try to outrush the Russians.

But before we prostrate ourselves before this idol of the National Science Foun-

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[1] U. S. DEP'T JUSTICE, REPORT AND RECOMMENDATIONS OF THE ATTORNEY GENERAL TO THE PRESIDENT, INVESTIGATION OF GOVERNMENT PATENT PRACTICES AND POLICIES (1947), (hereafter cited as REP. ATT'Y GEN.)

[2] REPORT OF THE PATENT ADVISORY PANEL TO THE ATOMIC ENERGY COMMISSION (September, 1947). See also FIRST REPORT OF THE ATOMIC ENERGY COMMISSION, SEN. DOC. No. 8, 80th Cong., 1st Sess. 4-5 (1947).

dation rolling along on the Juggernaut of the Attorney General's recommended policy, let us challenge the validity of a few assumptions which this program demands for its acceptance.

The proposed program demands for its validity the acceptance of certain assumptions, among which are the following:

1. The assumption that the Government should on a *peacetime basis* expend vast sums in conducting indiscriminate research;

2. The assumption that it is sound policy for the Government to permit patenting of the inventions of its employees in any way connected with their employment;

3. The assumption that it is sound policy for the Government to demand of commercial contractors the same rights it at present demands of its own employees;

4. The assumption that private enterprise suppresses patents;

5. The assumption that the ownership of a patent by the Government is ipso facto beneficial to the people;

6. The assumption that the policy of private ownership of patents is less beneficial to the people than would be free dedication of inventions to the people;

7. The assumption that an invention which is not far enough (or is too far) ahead of present technology to be advantageously adopted will be any more likely to be adopted if the patent is thrown open to everybody;

8. The assumption that the necessity for secrecy is determinative of the rights of ownership of an invention.

I

I challenge the assumption that the Government should *on a peacetime basis* expend vast sums in conducting indiscriminate research.

Our friends, the scientists and politicians (what odd bedfellows!), now quote George Washington: "In times of peace prepare for war." Surely, they say, we can all join hands in a merry circle on that proposition. And, they say, in modern warfare all peacetime technology and materials, all facets of science, and all discoverable resources must be brought to bear upon developing ways to overcome the enemy. We must keep ahead of all other nations in scientific progress because in a "total war" you have to throw the whole arsenal at the other fellow's economy, and never mind sparing the women and children. They say that everything useful in peacetime economy becomes a necessity for waging war. Thus no distinction can be made between what we need in peacetime and what we need for war.

They say that if we do not overcome the other fellow (with atomic rocket bombs, radioactive dust, bacterial poisons, disease, or what have you) he will destroy us utterly with the same or even more deadly means. Instruments of destruction, they assure us, are now so terrific that no defense can withstand them. Hence the National Science Foundation is necessary to put us in possession of further terrible methods of destruction with supporting technology, so that if the other fellow even so much as makes a face at us, we can blow the living daylights out of him and his

sisters and his cousins and his uncles and his aunts, even to the seventh generation.

They say that, in case of conflict, the nation with the superior science has the moral right to massacre the other nation to a man, leaving not so much as some old harmless fellow like G. B. Shaw with singed whiskers. That, they admit, is what is meant by the concept, "In times of peace prepare for war"—set to modern music.

But some pertinent observations may be made.

Scientists and politicians are not notable as moral leaders. Each group insists that it and it alone is the Moses to lead the National Science Foundation out of the wilderness. But since neither appears to be an adequate moral guide, might we not better let the Foundation stay lost for another forty years while the tribes regenerate their moralities?

Next, we may observe that the bellicose precept ascribed to Washington *was never followed by the people of the United States.* Never in our history have we entertained so absurd a proposition as the proponents of the Foundation now put before us, namely, to arm to the teeth in times of peace.

Further, we may observe that no nation has ever armed itself to the teeth without immediately going to war, or being immediately attacked. (Which way it was depends upon who is telling it.)

If the scientists and the politicians could catch the vision of inventing irresistible ways to establish peace and good will instead of irresistible ways of destroying humanity, the Foundation would have unanimous and universal support.

We know for a reasonable certainty that United States technology is plenteously good. Our industrial history proves it. No other country can surpass us, or even come close to being our equal, in the ability to turn the teachings of science into useful things, and to deliver them at a low price into the hands of the people. The opportunity for, and the remuneration resulting from, successful development and production of goods of all kinds has been greater in the United States than in any other country. We are a rich nation because we are productive of things useful to the people. War is wasteful and nonproductive of things useful to the people.

To do this great work of developing and producing new utilities, we have enlisted the intelligence of the people individually. We have always had enough science available because we have either pushed it ahead as we needed it, or we have bought or borrowed it wherever it was to be found. To us, a body of science which we could not shortly turn into something useful has had no particular appeal. We do not, as a people, worship science for its own sake, but look to it as being useful, first and foremost, and cultural incidentally. Can anyone point to a situation in which the United States has had to sit on its hands and wait for science to give it something to do? If so, it has not been publicized by those who could make the most of it. If we did not have the knowledge here, we borrowed some from the neighbors. Of course, no one speaks about what our neighbors may have borrowed from us in the meantime. Now we are to assume the job of discovering and inventing so fast and so furiously that nobody else will have a look-in.

But the National Science Foundation is said to be intended to perform a new function, namely, to give us a plenteous supply of basic science, such as we are supposed to have borrowed from Europeans in times past. Now that Europe is so badly smashed up, we are told, we cannot look to the European scientists, but must do our own basic research and not only supply the threatened deficiency, but actually pre-empt all fields.

This has a peculiarly phony ring. We propose to scatter around half a billion or more dollars yearly to hire people to think and work out basically new scientific ideas and theories *under Government control.* If that is intended to reproduce the conditions under which the Europeans produced their best work, it would appear to be mistaken. The Europeans produced their contributions to science not because they were heavily subsidized, and organized and directed by other scientists or politicians, but because they worked as free individuals.[3]

If the Europeans, free of government control, could lead the world in basic science (as we are told) on boiled turnips, will a diet of caviar, spoon-fed by the Government, make the Americans see scientific visions and dream ultra-stellar dreams? Some of us doubt it. If the Europeans could produce pure science because they were without government control and subsidy, what will government control and subsidy do to our scientists?

Assuming that it is pure science that the Foundation is to generate, we might dismiss the consideration of patents, for in pure science patents are not involved. But the proponents of Government ownership of patents resulting from Government research get quite lyrical about the possibilities of patentable inventions. For example, the opening chorus in one recent opus begins, "A golden stream of patentable inventions pours from the scientific research and development conducted or financed by the Federal Government."[4] How long would any accomplished scientist be satisfied to delve in pure science with this "golden stream" running between his fingers? He would quickly be pulled out of his orbit by the distracting forces inherent in that "golden stream." Competition for continued support by way of next year's appropriations would be difficult to maintain if a scientist merely discovers an unknown element in the spectrum of Saturn when all the other workers in the same vineyard are pouring out the "golden stream of patentable inventions."

Apparently the Foundation will find it necessary to be all things to all men, and yet to remain, like Caesar's wife, above reproach.

The scientists will strive for scientific freedom. They want freedom from the politicians. One of their spokesmen, John R. Baker, says:[5]

> The great biochemist, Szent-Györgyi, has written these words: "What I want to stress is that the pre-condition of scientific discovery is a society which does not demand 'useful-

[3] JOHN R. BAKER, SCIENCE AND THE PLANNED STATE (1945).

[4] Kreeger, *The Control of Patent Rights Resulting from Federal Research,* XII LAW AND CONTEMP. PROB. 714 (1947).

[5] BAKER, *op. cit supra* note 3, at 42-43.

ness' from the scientist, but grants him the liberty which he needs for concentration and for the conscientious detailed work without which creation is impossible. . . . The real scientist . . . is ready to bear privation and, if need be, starvation rather than let anyone dictate to him which direction his work must take." These are the opinions of the man who was the first to isolate a chemically pure vitamin. He is a Nobel Prizewinner for Medicine.

The politicians will be interested in the "golden stream" and will be likely to demand that some of it be diverted into the local irrigation ditches of their constituents.

If the Foundation is to devote itself to pure science, there will be difficulties in finding suitable personnel who will submit to political domination. Again I quote Baker:[6]

. . . If the selection of scientific personnel is left to the state, the wrong men are likely to be given important posts, because those who are not themselves scientists will be led astray by the false claims and pretences of ignorant and foolish persons. As we have seen, such persons may even become academicians and be given wide powers to control scientific research. Worse still, scientists may exhibit a servile obedience to their political bosses and let dogmas and slogans affect their science.

In the United States we have a great deal of so-called industrial research carried on by industry. It is an appendage or adjunct of industry to the extent that it attempts to push related scientific knowledge ahead of the needs of that industry. It may be said that this is narrow and utilitarian, but so far we have done wonders with it. The question is now raised: Could the Government do it better?

If the Government's money is to do this class of work, the Foundation will be nothing more than another intrusion of Government into private industry. It will merely be an attempt of the Government to do what private industry can do and is doing very satisfactorily now. Might it not become the yardstick, constructed (like TVA) as a standard by which to measure rates, but also certainly well designed to be laid across the back of an enterprise that fails to go along?

An attempt to conduct research and development out of relation to civilian enterprise is not likely to be realistic or useful. Science and useful arts have many diverse possibilities. Who knows what all the problems are, and which ones should be solved now to meet the needs of industry and the people?

If we should all wait for a bureau at Washington to solve our problems for us, what would happen in the meantime? Suppose you are selling washing machines. Your competitor comes out with a new model and begins to sweep you off the market. What would you do? Appeal to Washington for a competing development? If so, you would probably, after a more or less protracted period of delay, receive the information that the Washing-Machine Division of the Foundation has been discontinued because some scientist in the Clothing Division of the Foundation has discovered that paper shirts can be made out of cornstalks. It has been found,

[6] *Id.* at 75-76.

the communication would go on to say, that people who wear these shirts gladly throw them away after the first use, thereby establishing them as disposable. Hence, research for the washing machine industry has been discontinued as per a recent directive. The advice would then follow that you could obtain, on suitable application, a free license along with 140,000,000 other citizens to go into the cornstalk-paper-shirt-business—and lose your shirt.

Competition is a personal sort of a thing. If you could write the ticket in Washington by which each competitor could meet his competition, you would merely be doing what everyone is now hustling around and doing for himself. But if you attempt to favor one over another, you are destroying the natural balance which results from individual initiative, and discouraging private enterprise. You cannot expect to help competitive enterprise by removing the means by which people compete.

Let us take the matter to its logical conclusion. Assume that the Foundation is so successful that it supplies all necessary inventions and discoveries free to everybody. Will that promote progress of science and useful arts? The constitutional policy of promoting the progress of science and useful arts by the patent system will then have been effectively nullified. Going through the motions of first patenting and then throwing open to the public is merely abracadabra having no significance—observing the form but destroying the substance. To the extent that the Foundation is successful in inventing, patenting, and throwing open to the public, it removes to that extent the intended functioning of the patent system.

If there were no patents on anything, everybody would have a free license without any nonsense. Is that what the scientists and politicians are striving for?

If the Government should begin to supply free apples to everybody who had an apple stand, everybody else would put up an apple stand, and shortly the apple-selling business would be ruined. If this "golden stream of patentable inventions" flows freely into everybody's pocket, who will have a competitive advantage? But if it is made to flow only to some pockets and not to others, who will make the selection? Some people might be dissatisfied.

What is to be the measure of the projects to be undertaken and the amount of money to be spent? Here the proponents of the Foundation are a bit vague. Perhaps a combination of lucky numbers is as good in this case as it has been in other weighty governmental determinations, such as the price of gold in the devaluation of the dollar. Lucky numbers might be a little strange to the scientists, but they would have to get used to them.

As I have heretofore pointed out, there is a natural rate of assimilation of scientific progress in the industrial economy of this country which cannot be exceeded except at great cost, as in our war effort. You cannot, in a peacetime economy, bring out in one year six successive new models of the Ford automobile, but in wartime you can bring out as many successive new models of the Sherman tank as the

war situation demands. Cost then is not the controlling factor. It would appear to be far more natural to push science and technology ahead of industry only about as fast as needed if peacetime conditions are to be considered, than for the Government to push science and technology ahead faster than industry can assimilate it.[7] The Foundation is not a valid peacetime need. It is essentially a war measure, because it is not tied to peacetime needs, but is expected to arm us for war. The appropriations so far proposed for the Foundation have no relation to the industrial output to be effected. Industrial enterprises relate their appropriations for research programs to the volume of their business and the state of competition. No such controlling factors can operate on Government appropriations. Will the appropriations be made on a fear basis, or on a pork-barrel basis, or on a lucky-number basis?

Let us ask one more question on this subject. What is going to happen in respect of inventions or discoveries by the National Science Foundation that have a profound or even decisive military value, and have also highly valuable civilian possibilities? Will they be patented, assigned to the Government, and the patents thrown open to the public? I doubt it. Is not the National Science Foundation bound to hold them under secrecy just as the Atomic Energy Commission is now charged with retaining in secret everything pertaining to the production of fissionable material and its use in weapons? Unavoidably, things which would be of great interest *for civilian purposes* are kept under the wraps of secrecy because they have potential use in warfare. The difficulty with secrecy is that it is like a forest fire. Either you have got to put it out or it spreads. When you make one thing secret you must make the next thing to it secret, and so on indefinitely.

Assume that the National Science Foundation finds something approaching in importance the fission of the atom. Will it be thrown open to the public, or will it be kept secret? Since, as our scientist friends assure us, practically every discovery of science has some military value, who will be so bold as to release any information which some appropriate bureaucrat regards as having potential military value, no matter how great its peacetime value? The result will be that the National Science Foundation will begin to suffer from the constipation of secrecy. And if the Foundation should take on a wider and wider scope, might not our whole economy become affected with the same disorder?

It appears that we are not sufficiently emerged from a war psychology to consider objectively whether there is any justification for the National Science Foundation and its huge Government expenditures, presumably for peacetime purposes. Perhaps, in the present condition of world affairs, we must ask ourselves whether we regard war or peace as the normal condition. Perhaps for some time we must do our plowing with the sword ready to hand.

[7] Scientists assure us that basic scientific discoveries cannot be forced and the conditions under which they are made cannot be prescribed. They say a scientific discovery is the unpredictable reaction of chance suggestions in a fertile mind free of restraint. Some people think the scientists are not beyond putting on a show for their own benefit. But if you take them at their word, it rules out the fleshpots of the National Science Foundation.

II

I challenge the assumption that it is sound policy for the Government to permit patenting of the inventions of its employees in any way connected with their employment.

Let us first sketch briefly the historical development of the law covering the relation of employer and employee.

The Federal Government has, since early times, been confronted with the legal question of what rights it has in inventions made by its employees. The Supreme Court and the inferior courts, in a series of controlling decisions,[8] most of them before the turn of the century, defined the rights of the Government and its employee inventors as a development of the law of master and servant.

The Court said, in effect, that these rights depend upon the facts of the situation. There are two typical situations:

1. Where the invention is directly in line with and results from performance of an assigned employment, title and all rights go to the Government;[9]

2. Where the invention does not fall within the assigned employment (even though based on a subject closely allied with assigned duties), title remains in the inventor.[10] The Government, where the facts warrant, may claim a shop right.

At about the same time there was a development in the law of contracts concerning the right of an employer to compel assignment by an employee under contract to assign inventions relating to the employer's business. The controlling decisions established that a contract to assign future inventions is not contrary to public policy, and that the employment itself is adequate consideration.[11]

So we come up to the present discussion with the background of settled law on three general propositions:

1. Without a contract to assign, the employee is obligated to assign those inventions to which the performance of his duties looked. In the absence of a contract, he is not obligated to assign any other inventions;

2. By contract any arrangement of rights in employees' future inventions may be provided for;

3. That the two foregoing propositions of law apply equally to the Government and its employee, and to the private employer and his employee.[12]

In the judicial determination of the rights of the Government and of the employee, there was no occasion to determine fundamental policy, because the function of the court is purely judicial, *i.e.*, laying down the law, not enacting it.

[8] Solomons v. United States, 137 U. S. 342 (1890); McAleer v. United States, 150 U. S. 424 (1893); Gill v. United States, 160 U. S. 426 (1896); Standard Parts Co. v. Peck, 264 U. S. 52 (1924); United States v. Dubilier Condenser Corporation, 289 U. S. 178 (1933).

[9] Solomons v. United States, *supra* note 8.

[10] United States v. Dubilier Condenser Corporation, *supra* note 8.

[11] Continental Windmill Co. v. Empire Windmill Co., 6 Fed. Cas. 366, No. 3,142 (C. C. N. D. N. Y. 1871).

[12] Standard Parts Co. v. Peck, *supra* note 8.

It was decided that employment by the Government of a worker in the capacities set forth in the decided cases did not deprive the employee of the right to make inventions useful to the Government or to take patents on them, subject of course to the rights of the Government in or under the resulting patent.[13] That is to say, employment of a man by the Government as such does not automatically deprive him of the right to make inventions or to apply for and receive the grant of patents on them. Whether that policy should be continued is now the subject of our inquiry.

The patent system is essentially an instrument of state policy. There is no natural right in a patent to anybody. True, the patent does cater to the natural instinct of the creator of an idea, that he has some special property in the idea. His natural right in his discovery or invention includes the right to keep the matter to himself. If he wants to use it in secret that is his business. But if someone else is allowed to learn about it, or invents the same idea, even though later, there is nothing the first inventor can do about it. That is about the extent of the natural right of the inventor.

But the center of gravity of the patent system has long since shifted its locus from the inventor, as such, to the one who produces the invention and supplies it to the public. The fruit of the patent system is a new device or a new utility or a new method in the hands of the people at a price which they can afford to pay.

The patent gives the producer a protected market in respect of the invention for a limited time, namely, the life of the patent. That protection of the market gives him some assurance on which he is justified in taking the risks which he must undertake in applying the technology of all the relevant arts to the production of the invention, the employment of capital and labor, and the creation of sales, all of which are involved in the venture. The modern manufacturing corporation in the United States hires its inventors, and maintains its staff of engineers to develop the idea and design a suitable embodiment of it. It maintains a production force with suitable machinery and operates a sales and service force to deliver the new device into the hands of the people at a price which they can pay and to help them keep it in such condition that it has its maximum utility.

In brief, in a modern competitive enterprise, invention, engineering, production, and sales are integrated in one unitary activity.

If there is any doubt as to the extensive employment of inventors by corporations, one may refer to an issue of the *Official Gazette* of the United States Patent Office, and compare the number of patents issued directly to assignees who are corporations with the total number of patents issued that week. The percentage runs between 50 per cent and 60 per cent. The percentage has been climbing and is climbing. One engaged in practice knows from experience that most of these assigned patents represent inventions made by employees of the assignee corporation.

It is important to examine more closely this phenomenon of inventors employed

[13] United States v. Dubilier Condenser Corporation, *supra* note 8.

under contract to invent. The employment is voluntary. It is a truism that each man seeks that which he considers to be to his best advantage. Obviously, if a skilled inventor does not wish to be employed under contract to assign his inventions, he need not be so employed. There still are individuals who prefer to rely upon their own resources, make their own inventions, and sell or license them to manufacturers. But compared with the numbers and the skills of corporation-employed scientists and inventors, the number of lone-wolf inventors is insignificant. It is true that occasionally an inventor, not in the employ of anyone so far as producing inventions is concerned, brings in a new worth-while idea. While such inventions are rare, they are occasionally very valuable. The patent system cannot ignore them, but again we must remember that governmental policy must be administered for the general benefit, and not to serve exceptions.

Now for privately employed inventors under contract, the employment is adequate incentive to invent. This is the experience in industry generally. If an inventor employed by a corporation makes a notable contribution, it is the usual policy to increase his salary or to give him a bonus. The incentive of the patent is transferred to the corporation, and the corporation puts the invention, when it is successfully designed and engineered and produced, into the hands of the people.

The patent is conceived as an instrument of state policy, based largely upon human psychology. It offers the inducement of gain through the exploitation of an exclusive market for the invention. It has a powerful hold upon the human desire for gain which may be secured through the activity of supplying the new device to the people, which thus results in raising the standard of living.

In brief, the basic policy of the patent is founded on the assumption that the exclusive market which it insures is sufficient incentive to the owner to make a profit by producing and selling the invention in that protected market.

Now when a Government employee makes an invention, and is required to assign it to the Government, the incentive to invent which he has is certainly no greater than the incentive to invent which the similarly situated privately employed inventor has; in fact, it is generally less, because the Government finds it more difficult to increase out of his class the pay of the meritorious individual than does the private employer, and, since the Government does not market the invention, it has no measure of its value.

The Government does not have the ability or the facilities to put an invention on the market and get it into the hands of the people. The patent in Government hands therefore fails of its purpose. Throwing the patent open to all the people destroys the protected market which is the essence of the patent, and which is its specifically valuable feature in promoting the production of the invention and the placing of it in the hands of the people.

There is one feature of the use of a patent on which there is an almost complete lack of understanding, except by those who are engaged in industry. That feature

is the highly specialized and expensive work required to design a device for manufacture and sale, and to design the special tools and manufacturing process to produce it. The point is simply this: that before any invention can be put upon the market, the form in which it is to be manufactured and sold and the process by which it is to be produced require a great amount of study and developmental work in order to embody in the article and in its method of manufacture all of the relevant technologies which bear upon its construction and use, as well as upon the methods of its production. This application of the appropriate technologies of all related industries is required in modern manufacture of any product. Any patented or unpatented product which enters a competitive market must be engineered and designed, even if it is so simple a thing as a screw-driver. The shank must be made of the right kind of steel. That can be determined only by experience or experimental tests. The technology of steel must be applied. The shank must be forged to shape, and that requires knowledge of metal-working and forging machines. It must be polished and ground to the right size and shape. The grinding and polishing require all the technology of the abrasive art and the polishing art. The selection of the handle, if it is to be made of plastics, involves the technology of the plastic art. If the handle is to be molded on the shank, then there is required the appropriate technology of plastic molding. Each material in and each operation on so simple a thing as a screw-driver calls for the specialized knowledge and technology of the specific art which has been separately developed to perform that step.

Much more difficult is the application of the appropriate technology to a new idea where there is nothing to go by.

Now it is competition which compels this application of the highest stage of modern technology to each manufactured article, for if *A* sells his screw-driver, which does not embody all the modern technologies, *B* will supply one and push *A* out of the market. Even though the article is patented, the manufacturer must apply all technologies available, and continue to embody such improvements in all of the technologies as are available, first, to meet the competition of substitutes which lie outside the patent, and, second, in order to be sure that when the patent expires he will not be on the market with a horse-and-buggy article which will immediately be pushed out of the market by the competition of others who have applied modern technology to the production of the article on which the patent is no longer in force.

What this leads up to is that when the Government issues a free license to anybody to make a newly patented article, it is rare indeed that anyone will rush in and undertake the development and testing necessary to produce a commercial article containing all the applicable technologies, unless he has some advantage in the market which will keep others from immediately copying his work and underselling him on the market.

No one can point to any important industry founded on a non-exclusive license.

David Lloyd Kreeger, writing on *The Control of Patent Rights Resulting from Federal Research,* cites the Attorney General's Report in support of the statement that "the experience in the agencies which permit the employee to retain the patent rights is that he almost always sells it to a company operating in the field."[14] In other words, the patent thus falls into the hands of him who can use it, and becomes useful in promoting the marketing of a new invention, if the invention has such merit. The assignment of a patent to the Government, with the issuance of free licenses to everybody, does not have the same result. The question then is, as a matter of policy, would it not be better policy to insure the patent's arriving in the hands of a producer who can use it, since it must ultimately land there to be of any benefit as a patent? How can that beneficial result be secured?

Now there is a class of employees in the Government, namely, the officers and employees of the Patent Office, who are prohibited by law[15] from owning, except by inheritance or bequest, any right or interest in any patent issued by the Patent Office.

The incentive to invent certainly is not an element entering into the outlook of this employment. However, the examiners in the Patent Office are all technically trained men, some of them highly skilled engineers, and some of them scientists.[16]

It is here proposed that legislation similar to that applying to Patent Office examiners be made applicable to all Government employees, so far as concerns any subject which relates to their activities in pursuit of their employment.

It is well recognized that the arts are so far advanced that almost any invention which *A* does not make today, *B* will make tomorrow. A discovery which *X* does not realize today, *Y* will realize tomorrow. No one has ever complained about any inventions, which patent examiners might have made, being delayed until someone in private industry makes them. Likewise, no invention which other federal employees would be inhibited from making would be seriously delayed in its advent into industry because of such a prohibition. The benefit, however, would be that the invention, when it did arrive, through the mind of a non-government inventor, could, through the granting of the patent, have its proper effect in affording a protected market, and thereby it would offer the inducement to someone to initiate the business of supplying it to the public. If the patent system is sound, as the Constitution of the United States assumes, it should be given full freedom of operation.

This proposal to bar federal employees from taking any patents on inventions which might be made in the course of, or relating to the subject of, employment

[14] Kreeger, *The Control of Patent Rights Resulting from Federal Research,* XII LAW AND CONTEMP. PROB. 714, 733 n. 111 (1947), citing 2 REP. ATT'Y GEN. 24, 51, 55, 172-173.

[15] REV. STAT. §480 (1875), 35 U. S. C. §4 (1940).

[16] Note in this connection that Albert Einstein developed the most important part of his basic scientific theories while employed as an examiner in the Patent Office of Switzerland.

paid for by federal funds is based on the same theory as the law respecting patent examiners, namely, that the denial of a right to a few is warranted by the benefit accruing to the many through the carrying out of a state policy. The patent system is an instrument of state policy and is to be so shaped as best to perform its intended function.

III

I challenge the assumption that it is sound policy for the Government to demand of commercial contractors the same rights it at present demands of its own employees.

A distinction needs to be made between federal employees, that is, individuals who are hired to give their personal services to the federal agency, and the contractor who undertakes to do a specific job of research or development, but who really is in the business of supplying goods or services to the people. While there undoubtedly are numerous cases of contractors who do specific jobs for the Government, and who may rely entirely on Government jobs, there is a vast difference between an individual federal employee who depends upon his salary as his business income and the contractor who is engaged in manufacture and sale of articles to the public, even though that public includes the Government.

The Government employee has no use whatsoever for the protected market which a patent gives him; and, as the Attorney General's Report suggests, such patents find their way into the the hands of companies who can use them. It would be of maximum benefit to everyone to allow the contractor, who has a business position in respect of the subject matter of the patent produced in the course of performance of his contract, to take title to the patent and give the Government its royalty-free license.

Contractors such as commercial laboratories or educational institutions which have no commercial business and cannot themselves use the protected market of the patent have no business messing into patentable inventions and discoveries, but should be confined to problems in science above the level of the patentable. They should be treated exactly as Government employees in respect of their contracts, and should be prohibited from taking patents, since it would be to the greater benefit of the people that they should not do so.

IV

I challenge the assumption that private enterprise suppresses patents.

The ownership of a patent, it is charged, gives the power of suppression of the invention. That, one might say, is a philosophical observation comparable to calling attention to the hole in a doughnut. But if and when the charge is made that the public is deprived, by suppression of a patent, of an invention for which there is any substantial unfilled demand in the market, it is time to inquire what is meant by suppression. Those who charge that patents are suppressed have been challenged to bring forth the evidence. What they have produced are instances in which

inventions or improvements covered by patents have not been used. When inquiry is made as to why they were not used, or perhaps licensed to be used by others, there has in each case been found a reason based on the economics of the situation. If mere non-use by the owner of the patent, or any licensee, constitutes suppression, then the United States Government is the greatest suppressor of patents of all time. The Alien Property Custodian reports that he seized about 22,000 inventions on which there were patents or applications. He licensed about 11,000, or half of them. Is the Government then suppressing about 11,000 patents? The "golden stream" of these 11,000 patents has ceased to flow.

The Alien Property Custodian has said that he will grant exclusive licenses. Thereby, he has asserted the power to exclude under the patent and has brought himself within the definition of suppression as it is used by those writers on patents who emphasize the hole in the doughnut.

I have pointed out that the inducement to gain by supplying the patented invention to the public in a protected market is the valuable feature of the patent. Gain, being the inducement, becomes the measure of the pull which the patent exerts for putting its invention on the market. If the economic conditions are such that no gain can be made, or the gain is not commensurate with the risk, obviously the owner of the patent will probably not use it. Anyone familiar with the development of the industrial arts and the principles of business management is aware that ideas must compete for entry into the market, and only the one which fits the requirements of the particular situation to the greatest advantage will be employed. The others will all probably die on the vine. In this respect they will be exactly like the 11,000 unlicensed patents which the Alien Property Custodian holds.

V

I challenge the assumption that the ownership of a patent by the Government is ipso facto beneficial to the people.

The essential and worth-while feature of a patent is the protected market for the new invention. The Government is in no position to utilize the protected market, and hence cannot use a patent for the purpose for which it is designed. If the Government holds the patent and the invention is not worked, then the Government is guilty of suppressing the patent. On the other hand, if free licenses are offered to everybody, the essential value of the patent is destroyed.

In the twenty-fifth chapter of Matthew there is reported the parable of the talents. A master going into a far country called his servants and delivered unto them his goods. To one he gave five talents, to another two, and to another one, bidding them trade with the talents until his return. Upon the master's return, the first servant reported a gain of five talents, the second servant a gain of two, but the third servant reported that he had hidden his talent in the earth. The master directed that he be relieved of the one talent and that it be given to the servant who had ten talents, commenting,

For unto everyone that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath.

Now, putting a patent in the hands of the Government is like putting the talent in the hands of the third servant. About all the Government can do with a patent is to hide it in the earth. The patent in the hands of private industry tends to create wealth and initiates enterprise, but in the hands of the Government the patent is sterile and produces no gain. It should be taken from the inefficient servant and given to a real producer.

The theory on which our industrial system has been founded is that stated in the Constitution, namely, that the granting of patents, the effect of which is to grant a protected market in the new invention, promotes the progress of useful arts, that is, progress in our industrial system. While undoubtedly industries are founded on the manufacture and sale of unpatented devices, the inducement to found an industry on a new device, the market for which is protected by a patent, is undeniably greater. That is the testimony of all industrialists. But so far, no one has come forward with an example of the founding of an enterprise on a new invention where the enterprise had only a genuinely non-exclusive license.

The Alien Property Custodian had ample opportunity to establish new industries based on patented inventions, for he had seized about 22,000 patents and applications from the enemy. No instance of a new industry founded on a non-exclusive license from the Alien Property Custodian is reported. It is reported that some of those who took free licenses from the Alien Property Custodian and put them into use found, in preparing the inventions for the market, that they had to introduce improvements.[17] These improvements, we may safely assume, were promptly patented. If the free license was adequate, why the need for improvements? The broad proposition is this: The basic purpose of the patent is to put in the hands of a producer a protected market in the invention, in order to stimulate the producer to make money by putting the invention in the hands of the public. Delivering the patent into the hands of the Government is destruction of the system to that extent. So long as the extent of Government ownership is small, the effect on our economy may not be noticed. But if, as proposed, the Government is to enter the field of inventing and patenting on a large scale, the beneficial working of the patent system will to that extent be diminished, and may alter the character of our economy. Ownership by the Government of a patent on an invention destroys the effective value of the patent, and it is the patent which supplies the strongest inducement for getting the invention on the market.

[17] Kreeger, *supra* note 14, at 740.

VI

I challenge the assumption that the policy of private ownership of patents is less beneficial to the people than would be free dedication of inventions to the people.

To sustain this challenge, we need only look at the industrial history of the United States under its patent system. Should we, as a nation, abandon our system of

granting patents which confer protected markets for bringing the invention to the people, in favor of a system under which everyone can copy everyone else's product and process? We need not rely upon our own experience or conjectures. We can refer this question to world history. Every nation of any substantial industrialization has found it desirable to install a system of patent grants for inventions. About 1879 Holland abandoned the granting of patents. In that year occurred the debates in the English Parliament as to whether Great Britain should continue the system of granting patents for inventions. Parliament decided that even in spite of the example of Holland, and despite all of the alleged disadvantages, which were greatly magnified in debate, it would continue the system of private patents for inventions. Shortly thereafter Holland re-established a patent system and has retained it ever since.

In 1876, at the Philadelphia Centennial Exhibition, representatives of the Swiss government saw so many wonderful American inventions that they went back to their country and convinced their government of the need for installing a system of private patents for inventions. That system has persisted to the present time.

The head of the Prussian government long resisted the introduction of a system of patents for inventions, and not until July, 1, 1877, was there a national system of granting patents for inventions in the German Empire.

The inescapable conclusion is that the system of granting patents for inventions is beneficial. It is better than the scheme of freedom for everyone to copy the invention of every other one. The proposal for a National Research Foundation, implemented by the Attorney General's recommendation, would have the Government create all the inventions it could, and release them to the public. This would to that extent create a situation exactly as though there were no patents. The granting of patents to the Government and free licenses to everybody is a meaningless ritual. Why should we go through the mumbo-jumbo of patenting the invention and proclaiming a free license under it, when the identical objective would be accomplished by mere publication of the invention? Probably this would reveal too plainly the destruction of the American patent system which, intentionally or unintentionally, is the inevitable result.

If the National Science Foundation, with free licenses to everyone under its patents on inventions, becomes a significant factor in the advancement of science and technology, it will to that extent impair the operation of the patent system, and disturb our present industrial system.

If, on the other hand, what the Nation Science Foundation generates, and the Attorney General throws open to the public, is merely raw material for inventions or discoveries which may be patented to private owners, it will become one of the greatest political pork barrels ever perpetrated.

VII

I challenge the assumption that an invention which is not far enough (or is too far) ahead of present technology to be advantageously adopted will be any more likely to be adopted if the patent thereon is thrown open to everybody.

It is assumed by the proponents of the National Science Foundation and the Attorney General's policy that an invention which is not economically justifiable in a given state of industry will be promptly adopted if the patent thereon is thrown open to everybody. Obviously, if it is not advisable for economic reasons to introduce an improvement into one's product, the presence or absence of patent protection is immaterial. No one will go ahead and put out a product on which he will lose money just because there is no patent on it, or because it is under a free license.

Similarly, if an invention is too far ahead of its time it will not go into use, whether it is patented or unpatented. I call attention to the mercury turbine, the initial work on which was done by the General Electric Company as early as 1910; patents were issued at that time. There were two chief difficulties in the way of its coming on the market. First, the metallurgy of steels and the art of welding had not sufficiently advanced to make ready construction feasible. Second, although the invention offered economies in coal consumption, the low price of fuel and other cost factors were such that it did not offer a great enough inducement in the existing economy to warrant its introduction. It was not until the recent war, with its demand for increased power production, coupled with great scarcity of materials, that it came into use, as an adjunct of existing stations to increase their capacity, about 1943. Whether there had been any patents or not, that invention could not have gone into use until technology and industry caught up with it. If everybody had been free to make it and use it when it was first proposed, it would not have changed the picture. The same thing is true generally. The tossing around of free licenses on patents will have absolutely no bearing upon their coming into use where the controlling factors which determine the use are economic.

VIII

I challenge the assumption that the necessity for secrecy is determinative of the rights of ownership of an invention.

The argument is put forth that since many inventions, the making of which the Government will in part or in whole finance, are important for waging war, the Government should take complete title to them, because it will be easier to keep them secret. The proposition is obviously basically false.

Because of a quirk in the law,[18] the Commissioner of Patents cannot avoid, in peacetime, the issuance of a patent disclosing restricted information; but under another provision of the law[19] any application which has become the property of the Government, and which is certified by the head of any department of the

[18] 40 STAT. 394 (1917), as amended, 35 U. S. C. §42 (1940).
[19] REV. STAT. 4894 (1875), 35 U. S. C. §37 (1940).

Government as important to the armament or defense of the United States, will not be abandoned if response to a Patent Office action is made within three years. The subterfuge of assigning a patent to the Government, with the understanding that it will be reassigned just before issue, has been employed. This subterfuge, of course, requires the cooperation of the actual owner. The deadening effect of secrecy is well known. Secrecy is, however, no reason for genuine Government ownership. Under present conditions, it is obviously desirable to maintain certain inventions in secrecy; witness the Atomic Energy Act of 1946. If there is a genuine need for secrecy on subjects outside of atomic energy, statutory provision should be made, and this should include provisions for delaying the issuance of relevant patents. However, the imposition of secrecy should be based upon factual need, and not upon ownership by the Government. If the maintenance of secrecy is of national concern, it should of course be imposed, but not for a minute longer than is necessary. Under present conditions, it is not the necessity of the situation which controls, but Government ownership and certification. After the application is once owned by the Government and certified as important to national defense the statute which permits the imposition of secrecy provides no machinery for its removal when the need has passed. The desirability of secrecy and the desirability of Government ownership in a specific case are independent questions and should be treated as such on their merits.

CONCLUSIONS

1. The proposed policy that the Government should take title to all inventions, into the making of which Government funds have entered, will not cure anything. Taken with the proposed expenditure of vast sums of money in research, as through a National Science Foundation, it would be highly destructive of our industrial system and of the patent system.

2. It is here recommended that Government employees be prohibited from patenting any inventions relating in any manner to the subject of their employment.

3. It is here recommended that research laboratories and university laboratories and their employees, under Government contract in a specific field, be prohibited from taking patents in that field in respect of inventions made in the course of or as a result of the contract.

4. It is here recommended that any contractor in the business of supplying the people or the Government with goods or industrial services take title to all patents made under the contract and grant the Government a non-exclusive license.

5. If failure to market a patented invention for economic reasons is suppression, the Government is equally guilty with private owners.

6. The experience of various nations indicates that the institution of private patents for inventions is a sound policy to stimulate industrial enterprise. Freeing inventions when first made from patents is the destruction of a universally recognized value.

7. Going through the motions of taking out a patent by the Government and throwing it open to the public is a mere mumbo-jumbo, equivalent to denying patents altogether on those inventions. If an invention is to be thrown open to the public, that can be done more simply and in a way which will reveal what is actually being done.

8. In respect of an invention which it is not economical to market, a free license to everybody will not bring it any more quickly on the market.

9. Secrecy for an invention and the right to the invention are two different things which should not be, but are being, confused.

THE ECONOMIC BASES OF PATENT REFORM

VICTOR ABRAMSON*

Over the past quarter-century, the need for patent reform has had the attention of every session of Congress, and has been the subject of nearly a dozen special investigations by congressional committees and in the executive branch of the government. Within the past ten years alone, the President has on three separate occasions directed a review of patent practices and the submission of proposals for reform, twice through the creation of special committees for that purpose. Public interest in the patent question has grown with the anti-trust disclosures of the late Thirties, and with wartime evidence of the influence of patents on industries vital in the national defense.

The kind of patent reform which we should have remains, nonetheless, a bitterly controversial issue. On the one side, evidence of patent abuse has provoked suggestions for removing entirely the powers of exclusion now conferred under patents, and for denying to patent owners virtually all of the authority which they now have to impose conditions on their licensees and on the distributors and users of their products. On the other side, there have been exaggerated counterclaims of the harm which might be done through any tampering with the rights now conferred on patentees. Neither group looks with much favor on the use which the courts have made of antitrust concepts to limit the exercise of patent power. A fresh appraisal of the role of patents in the modern economy may suggest a common ground on which to reconcile these opposing views.

I

Today's patent problem is a result chiefly of the fact that little has been done to adapt the patent system to the revolutionary economic changes which have taken place since it was founded. Patents had their beginning in the age which preceded the age of invention. They came into prominence as part of the mercantile system of sixteenth- and seventeenth-century England. At that time, capital was scarce, enterprise was lethargic, and commerce was fraught with great risks both physical and financial. Many branches of industry and trade were under monopolistic con-

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trol by the towns and gilds. The purpose of the mercantile system was to provide special inducements and regulations designed to expand the commerce of England and to strengthen its industry. It served also as one of the instruments through which the national government asserted its general authority over the economic life of the nation. Patents occupied a varied role in the economy of that period, and only one of those functions has survived.

Least important, when viewed from the perspective of today, was the use of patents to bolster the revenue of the Crown and to reward its favorites. Their other principal economic functions at that time were two. Through letters-patent, the Crown granted powers of monopoly in order to encourage the undertaking of risky ventures, sometimes in foreign lands. It was thought that this inducement would bring out additional capital, and would provide both a basis of protection against marauders and an instrument through which the Crown could exercise regulatory powers. In closer correspondence to their modern function, patents were also employed as a means of obtaining technology and skilled workmen from abroad, and to reward inventors.

Industry was then in the handicraft stage, advances in the arts were infrequent, and the communication of ideas was slow. The principal source of "new inventions" was knowledge of the crafts practiced in other lands which were more advanced than England. In order to encourage the immigration of the craftsmen who had this knowledge, the Crown granted to them the safeguard of patents. These sometimes conveyed only the protection of the Crown in practicing their crafts within the jurisdictions of the towns or gilds. The only public obligation regularly imposed on patentees was to teach their skills to others. This was sufficient to meet the needs of the time, since in order to discharge this obligation the patentee ordinarily had to set up shop for the practice of his craft. Patents were also sometimes granted to tradesmen who were the first to import a new article, in keeping with the purpose of enlarging commerce, or to those who merely established a new manufacture.

The ensuing struggle between Parliament and the Crown eventually brought forth, in 1623, the enactment of the Statute of Monopolies.[1] Under this statute, all monopolies issued by the Crown were declared to be "utterly void." However, patents for the "making of any manner of new manufactures" were exempted from this stricture. The term "new manufactures" continued for some time to be interpreted to cover technology new only in England, and "first importation" or the first establishment of a new industry, as well as "new inventions" in the sense in which that term is now used.

With the advent of the age of invention, when machine and chemical technology came to supplant many crafts, written disclosures were substituted for the teaching requirement. It thus became possible for patent owners to control the use of tech-

[1] 21 JAC. I, c. 3 (1623).

nology without practicing their inventions. This was to prove of importance when the enlarged supply of capital later brought a great increase in the number of new inventions.

At the time when our own present patent system was founded, we were also greatly in need of skilled craftsmen, technology, and capital to support industrial development, and the principal sources of these were external. There was support for the view that patents should be used broadly to attract all of these essentials. But other counsel prevailed, and the first patent Act of 1790[2] provided that patents should be granted only to those who had "invented or discovered any useful art, manufacture, engine, machine, or device . . . not before known or used." A year later, in his celebrated *Report on Manufactures*,[3] Alexander Hamilton proposed the use of tariffs and bounties to accomplish certain of the other purposes for which patents had earlier been used in England.

II

A century and a half has passed since our patent system was founded. In that time, patents have taken on a new importance in our economy, and have given rise to unforeseen problems. Yet the patent statutes remain, in every respect except administrative procedure, virtually unchanged.

During the greater part of the nineteenth century, new inventions were rare, and the chief obstacle to their commercial use was lack of capital. Only a negligible part of the economic life of the nation was influenced by the practices of patentees. Since that time, the growth of capital has greatly altered this situation. It has made research ventures, yielding benefits only in the future, and uncertain ones at that, increasingly worthwhile; and it has provided the means of using commercially the results of many of those ventures. The outcome has been a spectacular rise in the number of patented inventions. Today, a vastly greater proportion of superior technology is under the control of patentees.

This fact alone is of some public importance, since access to superior technology represents the key to entry into an industry or trade. The chance to invest in or to organize a business, to get a job, or to purchase an article or service, now depends more than ever on enterprise and rivalry among patentees who enjoy legally sanctioned limited monopolies. Forces have been at work, moreover, to diminish even this rivalry, and to extend to other fields the powers conferred under patents.

Where there is general access to industrial technology, competition can be depended upon to bring about the prompt commercial use of superior new inventions. The issuance of a patent for a new invention may diminish this prospect. The mere fact than an invention is monopolistically controlled reduces the pressure to make immediate use of it. This pressure can be maintained only if the technology open to rival firms is closely competitive. Even where the external com-

[2] An Act to Promote the Progress of Useful Arts, April 10, 1790, 1 STAT. 109.
[3] 3 WORKS OF ALEXANDER HAMILTON 192-284 (Ed. by John C. Hamilton, 1850).

petition is strong, a patentee who owns two competing inventions, but who has already invested in production under the inferior one, may for a time find it unprofitable to use the superior one. The degree of patent concentration is thus an important factor determining the commerical exploitation of new inventions.

The tendencies toward concentration of patent ownership have been strong in the modern economy. Inventive effort is subject to greater uncertainty than exists in most other fields of enterprise. Neither the chance of a successful result, nor the probable commercial value of any discovery, can be forecast. For this reason, the larger research ventures are more likely, relative to the investment made, to turn up a successful result; and the growth of capital has made it possible to take advantage of these benefits of large-scale research. Concentration of patent control has also been favored by the advantages which lie in large-scale exploitation of many inventions, a fact to which modern technology has contributed. Thus, even where inventions are independently developed, they are often placed in the hands of firms with established production and marketing facilities in the same general field. Perhaps the most important cause of patent concentration, however, is the usefulness of patents as a device for excluding rival firms from the market.

The acquisition of patents is often sought as a means of assuring competitive survival. Since an investment already made in production and marketing facilities may be blocked from effective use because a competitor has patent control of superior technology or of a favored product, the acquisition of competing inventions may represent the only means of safeguarding this investment. Conversely, these acquisitions are also sometimes motivated by the desire to exclude competitors from using the inventions. This practice has grown up because it represents one of the most effective, yet in some degree lawful, means of attaining market control.

To some extent, this purpose has been achieved through the research activities of individual firms. But since this is a game at which two can play, other practices have been developed with the same end in view. Where the rival firms in an industry have each been able to acquire patent control of important technology, they have sometimes agreed to an exchange of patent rights which would place each of them in exclusive control of some limited product field or market territory. The plan frequently followed has been for the participants in the exchange to agree on a division of fields or territories, and for each of them to grant to the others an exclusive license, or assignment of patent rights, pertaining to the field or territory assigned to them. Each of the patentees thus gives up partial control of technology in a broader range of fields or territories, in exchange for more complete control in a narrower range. The effect is to diminish competition in each of the fields or territories; and where the patents involved cover the only competitively effective technology, the result is to eliminate competition entirely. These effects are sometimes prolonged by an agreement to exchange future inventions according to the same pattern.

Less restrictive in their effects are the exchanges of nonexclusive licenses, some-

times accomplished through the "pooling" of patents. The proximate effect of these exchanges may indeed be to enliven competition among the participants, in as much as they make available to each of them the inventions of the entire group. However, such arrangements sometimes provide for output and price control covering the operations of the participants even under their own inventions. Where this occurs, preexisting rivalry is likely to be restrained. And in any case, the appearance of outside competition may be obstructed. Pooling and non-exclusive cross-licensing arrangements inevitably strengthen the competitive position of the participants as against others. Some of these arrangements, moreover, forbid or limit patent exchanges with non-participants, thus perhaps blocking their access to essential patent rights.

A distinctive problem has arisen in the case of foreign-controlled American patents. Patents, even today, perform a unique function in promoting the disclosure of foreign inventions which might otherwise remain unknown to us. This function is less important for inventions developed here, because those inventions are more likely to be used to domestic advantage even though they are not disclosed. However, patents granted to foreign inventors are more likely to be used to bar production here; or, alternatively, to restrain our international commerce.

Foreign inventors sometimes acquire American patents partly for the purpose of safeguarding their domestic markets against American competition. Where this is true, they may be reluctant to issue licenses for production here unless they can control exports. And they may neglect, or find it unprofitable or impossible, to sell or manufacture here under their inventions. Export or exchange controls at home or tariff barriers here may block either capital imports or imports of the patented article; there may be insufficient access to technology here; or it may be unprofitable to develop partial product lines. Moreover, where inventions are foreign-controlled, political or military considerations are more likely to intrude to govern their use here. This danger has become more acute with the rise of governments which intimately control the economic activity of their nationals.

These considerations have often been reflected in patent exchanges involving the nationals of different countries. In such exchanges, there have been found territorial divisions confining the participants to their home markets and certain adjacent areas, and explicit provisions prohibiting exports from those territories. Their effect is to block international commerce, and to establish exclusive control of the individual markets. In territories outside the home markets of the participants, unified control is sometimes achieved by requiring that sales be made through a common agency. Where international arrangements provide for a division of product fields, there are likely to be even more restrictive effects on supply, particularly in time of political upheaval or war. Experience has shown that such divisions of product fields have in some instances related to articles vital in the national defense or to the public welfare.

A final factor which has contributed to the non-use of patented inventions is a

result of the division, rather than the concentration, of patent ownership. With the growth of capital, industrial research has become widely diffused; and much of it, under the inspiration of the published specifications of patent grants, has been directed toward improving or "inventing around" existing patented inventions. Partly as a result of this fact, there has arisen an enormous group of dependent inventions divided in ownership from those which are controlling.

These dependent inventions fall into two general groups. One consists of the improvement inventions which are legally blocked from use by a dominant patent, and the process inventions which are similarly obstructed by a controlling product patent, or less frequently the reverse. The other consists of inventions which, while legally and technically capable of independent use, must be employed in combination with others if the highest technical efficiency or economic value is to be achieved; or indeed, in some instances, if they are to be of any commercial worth. Where the ownership of dependent and controlling inventions is divided, involuntary non-use of the former may result, or there may be less efficient use of each of them. Non-use of a dependent invention is most likely to occur where the owner of the controlling patent is able to operate profitably without access to it.

The roles of basic and improvement patents are reversed once the basic patent has expired. The owner of the improvement patent may then be able to prevent others from making effective commercial use of the basic invention. This fact has given rise to two practices which have excited public criticism. The owners of basic patents have sometimes attempted to perfect improvements on these inventions, and to space the patenting of these improvements in such fashion as greatly to prolong their effective control of the market. In other cases, business firms have attempted to "fence in" competitors by acquiring control of improvement patents relating to the technology used by the competitors. In the first situation, broad use of the basic invention may be delayed for some time after the patent issued for it has expired. In the second, the use of improved technology is deliberately obstructed. Patentees are often aided in carrying out such plans by the fact that the owners of improvement inventions, being unable to make independent use of them, may have no choice but to sell them to the owner of the dominant patent or to some competitor of the dominant patentee who may find it profitable to purchase them as a means of restricting rivalry.

A second major criticism of the patent system has been the charge that patents are used to restrain manufacture and commerce in fields beyond the grants. The practices objected to are also of modern origin. They rest upon the fact that access to patented technology or to patented products has become highly important in many industries and trades. This has, in some instances, enabled patentees to secure from their competitors, or from the distributors of their products or those who use them, concessions which would be beyond the power of vendors of common articles of commerce.

Most common are the restrictions imposed on the licensee's use of the patented

invention. The issuance of a license creates a new competitor for a patentee who is manufacturing under his invention. In order to safeguard his investment against this competition, the patentee may limit his licensee's output, sales, or prices. Royalty charges are often inadequate for this purpose, since these charges are limited by the terms under which competing technology is available, while the issuance of a license places the patentee's entire investment in jeopardy.

If the limitations imposed on licensees were strictly confined to manufacture and sale under the licensed invention there would be no adverse effect on preexisting competition. But this is not always the case. Often the licensee combines the licensed invention in use with others of his own, or with others which are available to all. The restrictions embodied in his license contract then affect his other operations. Moreover, patent licenses sometimes require the licensee to purchase from the licensor materials or services available from other sources, or limit the licensee's manufacture, use, or sale of other articles competitive with those manufactured or sold by the licensor. Similar provisions have appeared in patentees' contracts with their distributors and with their vendees. Even where the patentee does not manufacture under his invention, he may impose limitations on his licensees, as a means of preventing "market-spoilage," or in order to carry out a plan of price discrimination designed to enchance monopoly revenue under the patent.

These restrictions have been found in many forms in patent license contracts, and in agreements relating to the sale or use of patented products. They all rest on the fact that the invention controlled by a patent cannot be perfectly duplicated from any other source, and they all reflect an effort by patentees to take advantage of this fact to secure other business or to limit other competition.

This summary of modern patent practices, and of their economic effects, is not complete. It will serve, however, as a background for consideration of the problems of patent reform.

III

Any effort to work out a patent policy suited to present industrial conditions must take into account certain factors which make the "production" of inventions unique, and which call for distinctive measures of public policy. While patents no longer serve the purposes which they served in the day of hand craftsmanship, they are needed, for other reasons, to foster inventions based on research.

The thought that monopoly power may be required to call forth production is repugnant to the view that has generally guided our public economic policies. Our chief reliance has been on individual initiative, safeguarded by personal freedom to choose an occupation and to retain the product of work undertaken. Among the essential parts of this plan have been our efforts to facilitate entry into industry and to limit monopoly. It is unlikely, however, that these incentives and safeguards would assure a sufficient supply of new industrial technology.

Unlike most other products and services, inventions are fugitive, and their

value cannot be recovered through the mere right of possession. Inventions consist merely of ideas, and once these ideas are known they may readily be possessed by everyone. Since it is often difficult to use an invention commercially without disclosing it, competitors of the inventor may thus be able to gain access to it without sharing in its costs. If this occurs, competitive use of the invention will tend to drive the price of the invented article to the point where the inventor is unable to gain a return for his discovery.

Several possible results would follow. There would be no incentive to invent except where it was anticipated that the invention could be commercially used in secrecy, or could be kept secret long enough to recover its costs. And wherever inventions did appear, the issuance of licenses would be discouraged since the invention could not safely be disclosed for the purpose of negotiation. Duplication of inventive effort would be more common than at present in the fields in which the incentive to invent remained. And the inspiration to further inventive effort gained through the disclosure of inventions would be largely lost.

It is often pointed out that inventions are sometimes the result of accident, or are otherwise created with little thought of the money income they would bring; but it is unlikely that the social requirements for new inventions can be met from these sources. It will be socially desirable to foster the creation of all inventions, the costs of which can be recovered through their commercial use. There may be others as well which are socially worthwhile, but these represent the minimum. Only if the social contributions which may be achieved through inventive effort are rewarded equally with comparable achievements in other fields of enterprise can there be assurance that productive resources will be used to equal social advantage in all of them. This aim cannot be accomplished so long as the commercial value of inventions may be dissipated through their disclosure in use. For today an important, if not the most important, source of new inventions is research requiring extensive capital outlays and deliberately founded upon and guided by purely pecuniary considerations.

The chief tasks of patent policy are to preserve incentives to supply inventions which meet social needs, while confining the rewards to inventors within the limits necessary for this purpose, and to the forms least likely to obstruct the commercial exploitation of the inventions or to serve as a basis for restraints in other fields of enterprise.

IV

Our present patent system represents an effort to foster inventions by offering to the first inventor the right to exclude all others from the use of his invention, and by allowing him to exercise this authority to control entry into the affected industries and trades. It has been anticipated that grants in this form would not only provide a sufficient reward to inventors, but would encourage the more rapid perfection of inventions in order to gain priority. The contrast with the public

policies followed in other fields of enterprise is apparent. Subsequent inventors are deprived of the right to use the products of their own labor, and the freedom of entry into industrial and commercial pursuits is impaired.

Some form of private right of exclusion appears to be unavoidable unless there is to be public subsidization of research. The validity of subsequent claims would be extremely difficult to determine once an invention was disclosed, but such determinations would be necessary if the present principle of priority were to be abandoned. Further, if the number of allowed claims were great, it is likely, for the reasons indicated earlier, that the commerical value of the invention would be destroyed. It is possible that an agreement could be reached among the various inventors, but uncertainty concerning the probable terms of such an agreement would act as a serious deterrent at the inventive stage.

It is inevitable, moreover, that any granted power of exclusion should affect entry into the industries or trades making use of, or vending, the invention. Inventions have no independent commerical value. What value they have is a derived one, resting upon the worth of the articles or services to which they contribute. For this reason, authority to control the use of an invention necessarily involves power over manufacture and commerce. The real question is how complete this power need be in order to insure a proper flow of new inventions.

Three factors are at present counted upon to limit and regulate the monopoly conferred under patents: (1) The patent grant is of limited duration; and since there is a requirement of full disclosure, free use of the invention, destroying the monopoly, presumably supervenes at the expiration of the grant; (2) based on the information set forth in the published specifications, others are free to invent and use commercially acceptable, although not technically equivalent, substitutes; (3) under interpretations of the antitrust statutes, certain patent practices are forbidden. In addition, under the standards of "invention" applied in sifting patent applications, the grants themselves are narrowly confined.

In appraising the sufficiency of these safeguards, the tests which should be applied are: (1) Do they permit the issuance of patents where monopoly power is unnecessary to assure the supply of inventions? (2) Where some form of special protection to inventions is necessary, does the authority now conveyed to patentees exceed that which is required?

While detailed examination of the standards applied in granting patents cannot be undertaken here, it appears that in economic terms they are generally satisfactory. Patents may now be granted only where the advance over the prior art exceeds that apparent to skilled craftsmen. Such advances can ordinarily be achieved only through the application of effort and the investment of capital. The use of these resources in inventive activity cannot be counted upon unless the earning capacity of the results is protected against dissipation through disclosure of the invention. Without some form of such protection, the public would be deprived of many valuable inventions which could be made commercially worthwhile under proper

safeguards. It is not feasible to single out the individual cases in which non-pecuniary factors motivate inventions.

The principle of limiting the patentee's return to that which can be gained commercially in competition with other technology prevents the deliberate use of the patent system to foster inventions which may have no social value, although it does not, of course, forestall such inventions. This is not to say that there may not be inventions which are worth promoting on some other basis. But there appears to be little relationship under our patent system between the risks assumed in inventive effort and the returns which may be gained under patents.

Limited duration of the patent grant, when applied on a uniform basis, is an insensitive device for this purpose. Inventions vary greatly in the state of their technical perfection for practical use, in the time required to initiate their commercial exploitation, and in the period necessary to amortize their costs even under the most diligent promotion. The period now in force has no meaning in an age in which new inventions are largely the product of research, and relate chiefly to technology which requires the extensive use of capital. Originally, we adopted the fourteen-year period then followed in England. This had been based on the time required for a craftsman to train two new sets of apprentices. The seventeen-year grant, now in effect, is the result of a compromise reached when an effort was made to extend the time to twenty years in lieu of the seven-year renewal then allowed. It would be hopeless, however, to attempt an individual proportioning of the grants in accordance with the time required to recoup the costs of the invention.

Reliance on the freedom to invent and use substitutes offers a more promising approach, if bolstered by certain safeguards not now provided. Patentees are required to disclose in "full working terms" the nature of their inventions. These "specifications" are published after the patent is issued and are made generally available at a nominal charge. Further, the protection granted under a patent covers only the technical equivalents of the invention, and not necessarily those which may compete with it in a market sense. Thus, far from providing effective protection against commercial rivalry, our patent system encourages the invention of commercially acceptable substitutes in so far as this is consistent with powers of exclusion relating to individual inventions.

The freedom to invent substitute techniques and products is not likely to work as effectively as freedom of entry does in the lines of enterprise in which it is fully preserved. The results of inventive activity are too uncertain, and it is unlikely that perfect substitutes will always be found. Moreover, in the case of product inventions even minor differentiation, particularly when supported by a patent, is likely to afford some degree of monopoly control of the market. Yet it is probable that further measures designed to maintain the competition among patented inventions are the best means of safeguarding the public interest.

Some excess of returns over costs in the case of unusually successful inventions may perhaps be justified, even though it could not be in forms of enterprise in which

there is fairly accurate advance knowledge of cost and market conditions. The unusual risks which characterize inventive effort may attract those who prefer a gamble over a sure thing, even though the prospect of loss may greatly exceed the prospect of gain. But these conditions are likely to discourage other prospective inventors. The attraction offered by potentially great profits may thus be indispensable if a proper flow of inventions is to be insured. How far this is true cannot be determined; and there is the danger that excessive returns in unusual cases will over-stimulate inventive effort and lead to wastage of productive resources.

V

The third factor now relied upon to curb unjustifiable gains through the use of the patent monopoly calls for separate consideration, since it represents one of the chief subjects of proposed patent reform. This is the use of antitrust concepts to limit the exercise of patent power. The patent statutes themselves do not restrict the use of the patent monopoly, nor do they provide any standards by which limitations might be imposed. And, except for one section of the Clayton Act,[4] no statute provides explicit criteria by which to judge in clear terms propriety in the use of patents.

Over the years, a body of law relating to the industrial and commercial use of patents has been built up through judicial decisions. In passing upon the patent practices which have come before them for appraisal, the courts have appeared to follow two lines of policy not always clearly distinguished. They have found certain practices to be beyond the "four corners" of the patent monopoly. And where a practice has been so held, it has been judged by criteria laid down in the antitrust statutes. In the absence of clear statutory guidance, the evolution of these judicial policies has been marked chiefly by indecision. Practices sanctioned at one time, and subsequently widely followed in business relationships, often have later been overturned, and today the field of patent law abounds in uncertainty.

Many of the difficulties which have been encountered in the development of judicial policy in this field may be traced to the inherent unsuitability of the antitrust statutes as an instrument for the control of publicly sanctioned monopolies. They are at once insufficiently lenient and insufficiently strict for this purpose. Yet they suggest the lines along which a proper patent policy may be developed.

The licensees of a manufacturing patentee are inevitably his competitors. However, the wisdom of allowing patentees to control the competition which appears from this source cannot be judged solely by antitrust standards. Without some authority to limit output and sales under a licensed invention, it is probable that patentees would issue fewer licenses. This might result in less efficient production and less active exploitation of markets. The allowable forms of limitation on the use of licensed inventions can rarely be found by reference to the antitrust statutes, since there can be no earlier or potential competition against which to measure

[4] 38 STAT. 731 (1914), 15 U. S. C. §14 (1940).

their effects. The strict application of these statutes would, in fact, require a complete ban on agreed restrictions, a policy which the courts have never followed. It would seem preferable to frame legislation designed specifically to regulate private use of the patent monopoly. Through such legislation, restrictions over licensees in the forms most necessary to encourage broader licensing could be sanctioned, and those least necessary for that purpose, and those most likely to have an adverse effect on competition in other fields, could be explicitly banned.

In contrast, anti-monopoly provisions which may effectively safeguard the public in fields which are free of patents are likely to prove inadequate for dealing with the concentration of patent control. The centralized ownership of competing inventions is likely to have a more harmful influence on the competition in an industry than a comparable concentration of other assets. The physical plant and distributive facilities of business firms are, in some considerable degree, reproducible, so that a transfer of these assets to a rival firm does not necessarily remove the threat of competition. The grant of exclusive rights under patented technology, however, will completely bar the grantor from the industry unless he is able to gain access to what is certain to be the limited supply of competing technology. If the concentration of patent control proceeds far enough it may result in the lawful exclusion of all rivals, subject, of course, to the limitations now imposed by law. The public has a further interest in limiting the concentration of patent ownership, since this is the most effective means, short of compulsory licensing, for insuring use of the most efficient technology, for holding the returns to inventors within proper limits, and for restraining the use of patents to limit competition in other fields of enterprise. For these reasons, concentration of patent ownership must be resisted more jealously than other forms of industrial concentration.

The same is true of a wide variety of agreements which limit competition. A limitation which might have no substantial effect on competition without the use of patents as a sanction might loom to considerably greater importance where it could be enforced through the deprivation of patent rights. Moreover, as was pointed out earlier, patentees are likely to be more successful in gaining such concessions from competitors. Restrictive agreements involving the transfer of patent rights may thus have to be limited more carefully than others.

VI

The remedy which has had the greatest appeal to many advocates of patent reform is the general compulsory licensing of patented inventions. This approach has, above all, the attraction of apparent simplicity, and there seems to be a precedent for it in the controls which have been imposed upon the public utilities.

If it could be successfully administered, the public benefits which might be derived from the general compulsory licensing of patented inventions would indeed be many. Inventions would be unlikely to lie idle because of inertia, and even less so because of design. The owners of dependent inventions would have ready access

to essential auxiliary technology. Since all could use the most advanced technology, production generally would be on a higher level and prices would reflect this fact. Even without disturbing the returns to inventors, output and price policies could become competitive. And the influence of the patent monopoly could more readily be confined within the bounds of the grant.

The administrative difficulties of general compulsory licensing, however, are formidable if not overwhelming. Inventions are not homogeneous products. Neither the cost nor the value of a new invention can be determined on the basis of past experience with other inventions. Moreover, because new inventions are unique, it is likely to take some time before their worth can be demonstrated. In setting royalty rates, it would be necessary to take into account the probable useful life of the invention, considering prospective advances in technology, and to estimate the probable returns at alternative royalty rates. Further, the rates set for competing inventions would have to be carefully proportioned to their relative worth. And, somehow, consideration would have to be given to the costs of creating the inventions. To make these determinations for some forty thousand or more patents a year would be virtually impossible, and the price of poor administration might be an adverse effect on the flow of new inventions. It has been suggested that the rates now "typical" could be followed. But it is difficult to classify new inventions according to old categories; the rates now charged in fact vary greatly within categories classified on a technical basis; and, if general compulsory licensing were inaugurated, there would cease to be an independent source for rate determination.

Intimate public regulation of rates and conditions of service has been undertaken in the public utility industries. But the conditions which brought forth such regulation in those industries do not prevail generally in the industries which employ patented inventions. In fact, a comparison of the two groups of industries, in so far as they can be distinguished, suggests an important difference and points to a principle which should properly guide patent reform.

Rates and conditions of service are regulated in the case of the public utilities chiefly because competition in those industries is considered to be both unenforceable and socially wasteful. The principle of confining intimate regulation to situations in which these conditions prevail has been observed, by and large, in our public economic policies, except in times of acute scarcity. Adherence to this principle is, it may be said, vital to the preservation of a private enterprise system.

In both patents and public utility charters there are public grants of private monopoly. But public utility charters, unlike patents, are granted partly for the purpose of facilitating public regulation. The unusual cost conditions which prevail in the public utility industries have motivated the difference in treatment. The minimum investment required to attain the highest level of technical efficiency in those industries is so great, relative to the size of the market for their services, that production is ordinarily carried on at a point at which the provision of additional service costs less than the average cost of the total services provided. Where this

is true, profitable operations require that prices be maintained above "marginal cost," and it may also be necessary to discriminate in prices in order to cover full costs of production. This can be done only if there are limitations on competition. An attempt to maintain competition under these conditions could lead only to unnecessary commitments of capital and ruinous price-cutting, or, alternatively, to retarded development of the industry. Failure to maintain competition, on the other hand, would lead "naturally" to monopoly or to agreement, express or implied, among the competitors. Monopoly has therefore been sanctioned in those industries, and entry limited on the basis of "public convenience and necessity," as a means of encouraging their development, of preventing over-building, and of facilitating public regulation of conditions of price and service.

No such considerations have motivated the grant of patent monopolies, nor are the powers conferred under patents comparable to those granted under public utility charters. The objective of the patent grant is to foster invention. Whatever power there may be over the exploitation of inventions is incidental to this purpose. Not only is protection against competing inventions withheld, except as to technical equivalents, but their creation is deliberately encouraged through the disclosure requirement and the maintenance of free entry into inventing. And, in contrast with public utility charters, the patent grant is limited in duration without relation to the continued commercial use of the invention.

The view persists that patents are designed, and are necessary, to assure the commercial use of new inventions. Patents could bring more prompt commercial development of inventions, and in some few cases might be indispensable to such development, since they improve the prospect of high profits and diminish the risk of loss through competition. But without enforced use, such as through compulsory licensing, they could have the opposite effect. Moreover, considered broadly as a matter of public policy, it cannot be said that the commercial development of new inventions stands in greater need of special encouragement than other fields of enterprise, or offers any greater prospect of public benefit. Many patents, in fact, are for improved means of manufacturing known products, or for improved forms of such products, and so are not subject to unusual risks in exploitation. There is less to be said, socially, for holding out special inducements to overcome uncertainties of demand than to overcome risks which are the result of cost conditions. The conclusion cannot be escaped that the idea of using patents to divert production in favor of the chosen subjects of the grants is a vestige of an era in which enterprise lagged and in which the government played a larger role in choosing lines of industrial and commercial endeavor.

The arguments here suggested against the general compulsory licensing of patented inventions do not necessarily hold against the more restricted application of this remedy in cases of patent abuse or to overcome protracted idleness of patented inventions. If compulsory licensing were so confined its administration would be

greatly simplified, and it has a special merit for dealing with certain types of patent practice which may be considered to run counter to the public purposes of the patent grant.

VII

The foregoing discussion does not present any specific plan of patent reform. The purpose has been to set forth certain economic considerations which should be taken into account in appraising any program which is presented. The challenge of patent reform is to avoid, on the one hand, the burdening of government with tasks which could be accomplished through the maintenance of more effective competition in the use of patented inventions, and, on the other hand, to avoid too heavy reliance for the regulation of these limited monopolies on the safeguards now provided under the patent and antitrust statutes. This is a challenge rarely met in the proposals now most frequently advanced.

THE UNITED STATES PATENT OFFICE

LAWRENCE C. KINGSLAND*

I

CONSTITUTIONAL PROVISION AND THE FIRST PATENT ACT

When the Constitutional Convention met in Philadelphia in May, 1787, one of the basic problems for solution was to determine whether a strong national government was to be formed or whether a confederation of the states was to be the basic framework of the new government. When once the decision in favor of the former plan was adopted, the Convention had little difficulty in determining that the grant of letters patent for inventions was a national function.

Many of the states before the adoption of the Constitution had, by special legislative acts, granted letters patent for inventions, following the historical precedent of such grants by the sovereigns in England.[1]

In England all special monopolies granted by the Crown were declared illegal by the Statute of Monopolies, passed in 1623 during the reign of James I, but that act specifically excepted the grant of letters patent to true and first inventors for the sole right of making and working new manufactures within the realm, for a term limited to fourteen years or less.[2]

It is not surprising, with this historical background, therefore, that when the final draft of the Constitution was adopted by the Convention in September, 1787, it contained the specific provision that:

> Congress shall have the power . . . to promote the progress of science and useful arts, by securing for limited times to . . . inventors the exclusive right to their . . . discoveries.[3]

The framers of our Constitution, with rational foresight, viewed the grant of limited monopolies to inventors primarily as a means of promoting the industrial development of the new republic and emphasized this primary objective by the phraseology of the constitutional provision.

The means to accomplish this primary objective was the provision for securing to inventors, as a reward or incentive, the exclusive right to enjoyment of their discoveries. The profit motive to the inventor was the spur to activity of inventors. The constitutional provision, therefore, not only recognized that the public interest would be served by the grant of letters patent, but it also recognized that, as a matter of incentive and of common justice, one who contributed to the public wealth of

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[1] Federico, *State Patents*, 13 J. PAT. OFF. SOC'Y 166 (1931).

[2] 21 JAC. I, c. 3, §6.

[3] U. S. CONST. Art. I, §8.

tangible knowledge in respect of the useful arts should be remunerated for his contribution.

The requirement that the term of the grant should be limited and should be available only to inventors for their discoveries clearly distinguished the nature of the grant from the odious monopolies for old things which, prior to the Statute of Monopolies, had been granted by the sovereign in England.

Pursuant to the Constitutional provision, the First Congress passed "An Act to promote the progress of useful Arts."[4] This act became effective on April 10, 1790. The title of the statutory enactment defined the primary objective as the promotion of the progress of useful arts.

Chief Justice John Marshall, at a later date, speaking for the Supreme Court in *Grant v. Raymond*,[5] clearly stated the philosophy underlying our patent system in the following language:

> To promote the progress of useful arts is the interest and policy of every enlightened government. It entered into the views of the framers of our constitution; and the power "to promote the progress of science and useful arts, by securing for limited times to authors and inventors, the exclusive right to their respective writings and discoveries," is among those expressly given to congress. This subject was among the first which followed the organization of our government. It was taken up by the first congress at its second session, and an act was passed authorizing a patent to be issued to the inventor of any useful art, &c., on his petition, "granting to such petitioner, his heirs, administrators or assigns, for any term not exceeding fourteen years, the sole and exclusive right and liberty of making, using, and vending to others to be used, the said invention or discovery." . . . It cannot be doubted that the settled purpose of the United States has ever been, and continues to be, to confer on the authors of useful inventions an exclusive right in their inventions for the time mentioned in their patent. It is the reward stipulated for the advantages derived by the public for the exertions of the individual, and is intended as a stimulus to those exertions. The laws which are passed to give effect to this purpose ought, we think, to be construed in the spirit in which they have been made; and to execute the contract fairly on the part of the United States, where the full benefit has been actually received, if this can be done without transcending the intention of the statute, or countenancing acts which are fraudulent or may prove mischievous. The public yields nothing which it has not agreed to yield; it receives all which it has contracted to receive. The full benefit of the discovery, after its enjoyment by the discoverer for fourteen years, is preserved; and for his exclusive enjoyment of it during that time the public faith is pledged.[6]

By the terms of the first statutory enactment one who invented or discovered "any useful art, manufacture, engine, machine, or device, or any improvement thereon not before known or used," upon application by petition to a commission comprising the Secretary of State, the Secretary of War, and the Attorney General, was entitled, under conditions provided in the act, to the grant of letters patent securing to him "the sole and exclusive right and liberty of making, constructing, using and vending to others to be used," his invention for a term not to exceed fourteen years.

[4] 1 STAT. 109. [5] 6 Pet. 218 (U. S. 1832). [6] *Id.* at 241, 242.

The petitioner, as a condition of the grant, was required to file with the Secretary of State a written specification, drawings, and in appropriate cases a model. These disclosures were to be of such a nature as to enable the asserted invention to be distinguished from things before known and used; and to enable others skilled in the art to make and use the invention upon the expiration of the term of the grant, and thereby to make available to the public the full benefit of the invention.

The Congress recognized that a legal grant of a patent was invested with the quality of property, and provided for the recovery of damages for a legally established invasion of this property right.

The commissioners or any two of them were empowered to determine the validity of the basis of the petition for the grant, and if they "deemed the invention or discovery sufficiently useful and important," letters patent in the name of the United States were granted. The decision of the commissioners was final, subject only to the power vested in the federal district courts, by an action instituted within one year from the grant, to cancel the letters patent.

It is interesting to note that the original commission was constituted of Thomas Jefferson, Secretary of State, Henry Knox, Secretary of War, and Edmund Randolph, Attorney General. This body of cabinet officers was variously referred to as the "Patent Commission" or "Patent Board."[7]

As a result of the vesting of the administrative functions under the act within the jurisdiction of the Department of State, Thomas Jefferson took the lead in the activities of the board, and because of his personal interest in scientific and technical matters, which he applied to the administration of this first Patent Act, he greatly influenced the initial development of the American patent system. He may, therefore, be regarded from a historical point of view as the first administrator of the system.

The full extent of the examination conducted by the commissioners can only be conjectured. They investigated the papers for completeness of disclosure, and presumably examined whatever sources of technical information were available. Statements made much later[8] suggest that a few elementary notions of the legal concept of invention may have been glimmering.

The system operated under the Act of 1790 for approximately three years. During this period only fifty-seven letters patent issued. While the system was thus productive of only a very limited number of patentable inventions, a very general foundation for the patent system was laid, which finally evolved into the structure of the system as it is now known.

[7] Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC'Y 237, 238 (1936).

[8] Letter of Jefferson to McPherson, August 13, 1813, 6 WRITINGS OF THOMAS JEFFERSON 175, 180 (Washington ed., 1854).

II

THE PATENT ACT OF 1793

The vesting of the power to grant patents in the commission, composed of the three cabinet members, placed a heavy burden upon these officials. Since the act required that a factual and quasi-judicial determination be made by the commission before the grant of a patent, and since these duties were incidental to other official duties, delays in the consideration of such petitions resulted. The personal administration under the act required time and energy of these top-level administrative officials of the Government which were needed for more pressing matters of state.

As a result, a number of proposals for changes were presented to and considered by the Congress, eventually resulting in the enactment of an entirely new patent act on February 21, 1793.[9] This new legislation radically changed the basis for the grant of letters patent.

The requirement for a determination that the subject matter was "sufficiently useful and important" to justify the grant was omitted from the new act. This caused a fundamental change in the system, from one based on examination of the proposed invention to one of simple registration without examination. The granting of petitions for the issuance of letters patent became largely a clerical function. These administrative functions were left in the office of the Secretary of State, and the processing of the petitions followed a very simple procedure.

Upon the filing of a verified petition in the office of the Secretary of State, together with a full disclosure, that office prepared letters patent and referred them to the Attorney General for a pro forma examination. The only requirement was that the Attorney General find that the letters patent conformed to the provisions of the act, whereupon the patent, signed by the President, was issued to the petitioner as a matter of course.

The routine grant of letters patent under the Act of 1793 was not absolute, however, because patents issued under its provisions were subject to "repeal" by action instituted in a federal court within three years of the date of the grant. If one attacking the patent by such process was able to show that the patent was procured "surreptitiously or by false suggestion," or that the patentee was not "the true inventor or discoverer" of the subject matter purportedly covered by the patent, the court was empowered to cancel the grant.

The act also attempted to clarify the negative character of the right secured by the grant—that is to say, the right was one to prevent others from "making, constructing, using and vending" the subject matter of the patent for the term of the grant, and the grant did not confer the right on the patentee affirmatively to make, use, or sell if such action would interfere with rights of others. The right to exclude others, however, was in terms referred to as "property."

The statute also dealt with the subject of interfering applicants for the grant of

[9] 1 STAT. 318.

patents relating to common subject matter. The solution offered by the act was a provision for a board of arbitrators to decide the disputed rights between interfering parties. This provision was to supply an omission from the original legislation which had given rise to questions of priority of rights between applicants for common subject matter. While the original act had omitted any specific provision, there may have been inherent power in the commission to determine the question of priority, but the new act made the provision specifically, and set up the practice of having the issues determined by the independent board of arbitrators. These provisions foreshadowed the later interference practice, as will appear when that phase of the administration under current practice is examined.

The act also included a requirement that an applicant relinquish rights under any state grant obtained prior to the adoption of the Constitution, as a condition of the grant of a federal patent.

During the period from the passage of the Act of 1793 until 1802 the administration of the act was conducted as part of the work of a clerk or clerks in the Department of State. In the latter year James Madison, then Secretary of State, appointed one person, who subsequently became known as the Superintendent of the Patent Office, to handle the patent work. In a short time, as the volume of work grew, the Patent Office developed as a distinct bureau in the Department of State under the designated administrator.

As a result of the loose provisions of the Act of 1793, it can well be imagined that operations under it were never satisfactory. Many issues arose from duplication of grants for common subject matter as well as many disputes regarding originality. Many frivolous disclosures were the basis of grants which gave rise to controversies over subject matter of little interest. The complexity and the confusion that the legislation generated imposed a heavy burden on the parties to patent litigation, and there was strong pressure from Congress, as well as from the public generally, for a revision of the law.

It was very clear that the registration system provided by the legislation was wholly unsatisfactory, and it was evident that in its practical working it was contrary to the original theory that there should be some scrutiny before the grant of a patent. While these conditions were recognized, Congress was slow to change the basis of the patent grant since there were some who held to the view that an incentive for a wide scope of disclosure to aid industry would result from a policy of granting patents freely; but it became more and more apparent that the system was not workable, so that finally, early in 1836, a committee of the Senate was appointed to make a thorough study of the system. This committee reported to the Senate and introduced a new bill embodying the changes deemed necessary to accomplish the reform of the patent law.[10]

The report of the committee clearly reflected the conditions that existed and, as a

[10] SEN. DOC. No. 338, 24th Cong., 1st Sess. (1836).

contemporary document, reveals the abuses that had grown up under the registration system. In part this report was as follows:

> Under the act referred to, the Department of State has been going on, for more than forty years, issuing patents on every application, without any examination into the merits or novelty of the invention. And the evils which necessarily result from the law as it now exists must continue to increase and multiply daily until Congress shall put a stop to them. Some of them are as follows:
>
> 1. A considerable portion of some of the patents granted are worthless and void, as conflicting and infringing upon one another, or upon public rights not subject to patent privileges, arising from either a want of due attention to the specification of claim, or from the ignorance of the patentees of the state of the arts and manufactures, and of the inventions made in other countries, and even in our own.
>
> 2. The country becomes flooded with patent monopolies, embarrassing to *bona fide* patentees, whose rights are thus invaded from all sides; and not less embarrassing to the community generally, in the use of even the most common machinery and long known improvements in the arts and common manufactures of the country.
>
> 3. Out of this interference and collision of patents and privileges, a great number of law suits arise, which are daily increasing in an alarming degree, onerous to the courts, ruinous to the parties, and injurious to society.
>
> 4. It opens the door to frauds, which have already become extensive and serious. It is represented to the committee that it is not uncommon for persons to copy patented machines in the model room; and, having made some slight immaterial alterations, they apply in the next room for patents. There being no power to refuse them, patents are issued of course. Thus prepared, they go forth on a retailing expedition, selling out their patent rights for States, counties and townships, to those who have no means at hand of detecting the imposition, and who find, when it is too late, that they have purchased what the venders had no right to sell, and which they obtain thereby no right to use. This speculation in patent rights has become a regular business, and several hundred thousand dollars, it is estimated, are paid annually for void patents, many of which are thus fraudulently obtained.[11]

As a result Congress passed the Act of 1836 in substantially the form submitted by the Senate Committee. This act became effective on July 4 of that year.[12]

III

THE PATENT ACT OF 1836

The new act specifically provided for the establishment of a Patent Office, created as a separate bureau within the Department of State, under a Commissioner of Patents appointed by the President by and with the consent of the Senate. The act definitely established a complete examination system and provided procedure for the operation of such a system. The determination of utility, novelty, and patentability of the disclosures became the primary function of the Patent Office. The decision to accept or reject applications was based on these criteria. The objective was to provide an adequate consideration of each application to the end that patents issued under such a system would have at least prima facie validity.

[11] *Ibid.*

[12] 5 STAT. 117.

The act reincorporated the requirement that the applicant furnish a specification, drawing, and model (if practicable), together with a verified statement of original inventorship. If prior invention, publication, or use developed as a result of the examination, the application was subject to rejection, but the applicant was entitled to a notice of a rejection together with grounds thereof.

An appeal was provided to a board of three disinterested persons appointed by the Secretary of State, one of whom, if practicable, was to be an expert in the particular art. This board sat as a board of arbitration to decide issues between the appellant and the Commissioner, and had authority to affirm or reverse the Commissioner's decisions.

Provision was made for interference proceedings, with jurisdiction in the Commissioner, in the first instance, to determine the issue of priority between rival claimants for a patent. The Commissioner's decision was subject to review by a board constituted as in ex parte appeals.

The decision of the board was final in ex parte cases and in interference cases between applicants. In an interference between an application and an unexpired patent the decision of the board was subject to review in a federal court by bill in equity. This original equity review of Patent Office decisions was provided only if there were adverse parties and one or more patents were involved.

The Commissioner was authorized to reissue patents in cases in which the original patent was defective, either because of insufficient specification or of overstatement of claims, provided the errors arose without fraudulent intent on the part of the applicant.

The original term of the patent grant was for fourteen years, but upon application to a board comprising the Secretary of State, the Solicitor of the Treasury, and the Commissioner, and upon sufficient showing, the term could be extended for an additional seven years by the board.

It is apparent that the system established by this forward-looking legislation provided the first comprehensive one based upon a rational theory for the establishment of patent rights in cases in which the applicant was justified in securing a grant, and of denying the assertion of such rights for the protection of the public for failure to comply with the provisions of the act. For the first time logical provision was made for the performance by the Patent Office of the dual function of rewarding a true inventor by the allowance of an application, but also insuring that the public would be protected by rejection of unfounded claims to subject matter that was in the public domain.

The Act of 1836 may, therefore, be regarded as creating the foundation upon which our present patent system was erected. In the basic principle of examination before grant the legislation created a pattern that was later followed by modern industrial countries which hold to the theory that the public interest is advanced by rewarding inventors who have in fact contributed to the public welfare a new and useful concept, and who have provided tangible and workable means for making

available such means to the public after the limited period of exclusive enjoyment by the inventor or by those holding under him.

The basic American concept of examination before grant, embodied in the Act of 1836, was retained in all subsequent legislation, which, on this score, was primarily directed to changes seeking to strengthen the system from the procedural point of view and to augment the personnel of the Patent Office from time to time commensurately with the workload imposed upon the Patent Office.

IV

LEGISLATION AFTER 1836

Within the period from 1836 to 1870 there were a number of revisions and amendments of the law as defined in the Act of 1836, but only a few of these changes have any important bearing on the fundamentals of the system.

In 1839 Congress passed an amendment affecting the right of review of the Commissioner's rejection of an applicant's claims, both in ex parte and interference cases.[13] Appeals to the board of examiners as provided by the Act of 1836 were abolished, and provision was made for appeal to the Chief Justice of the District Court of the United States for the District of Columbia. The appeal was to the Chief Justice in person, and not to the court as an appellate tribunal. The remedy by bill in equity was extended to embrace all cases in which patents were refused for any reason.

In 1842 patents for designs were authorized,[14] and the examination of design applications was added to the functions of the Patent Office.

This act also provided for the marking of patented articles—with a penalty for failure to mark and for false marking.

In 1848 applications for extension of the term of patents were placed under the sole jurisdiction of the Commissioner.[15]

In 1861, by the Act of February 18 of that year, suits in equity and actions at law arising under the patent laws were made reviewable by the Supreme Court of the United States regardless of the amount in controversy.[16]

On March 2, 1861, Congress passed an amendment to the patent law which included a number of important procedural changes.[17]

This act made provision for the taking of depositions in interference cases pursuant to rules established by the Commissioner, and vested the power in federal courts to require the attendance of witnesses by subpoena. A further important innovation was the establishment of a permanent Board of Appeals, which comprised three examiners-in-chief, each of whom was required to possess competent legal knowledge and scientific ability. The members of the board were appointed by the President and were subject to Senate confirmation. This Board of Appeals constituted an appellate tribunal within the Patent Office to review decisions of

[13] 5 STAT. 353. [14] 5 STAT. 543. [15] 9 STAT. 231.
[16] 12 STAT. 130. [17] 12 STAT. 246.

examiners in ex parte appeals from rejections of applications and also in appeals in interference cases. The decisions of the board were appealable to and reviewable by the Commissioner of Patents himself. The review of the final decisions of the Commissioner remained the same.

This act also enlarged the term of patents from fourteen to seventeen years, but eliminated the power of the Commissioner to extend the term of the grant. Certain other changes in practice before the Patent Office were made.

During the period while the basic statutory provisions of the Act of 1836 were in force, up to 1870, some twenty-five amendatory acts were passed. During this period there had been some conflicting interpretations of the several provisions of the statutes, and points of doubt and confusion had arisen. As a result, while there was no substantial dissatisfaction expressed in regard to the fundamentals of the legislation, there was agitation for a complete revision and consolidation in a single act of the basic patent law, culminating in the passage of the Act of July 8, 1870.[18]

V

THE PATENT ACT OF 1870

While it was the primary purpose of the Act of 1870 merely to consolidate and clarify the provisions of the existing statutory patent law, the new act did incorporate some additions relating to procedures in the Patent Office and provisions for review of Patent Office decisions, which have significance in connection with our present subject.

The Commissioner was given specific authority, subject to the approval of the Secretary of Interior, to establish rules and regulations not inconsistent with law for the conduct of procedure within the Patent Office.

The appointment of an Examiner of Interferences was authorized, whose function was to hear and determine in the first instance questions of priority of invention.

The act specifically empowered the Commissioner to refuse recognition to patent agents for just cause, and with the approval of the Secretary of Interior.

There was a change made with respect to appeals from the decision of the Commissioner of Patents, providing for appeals to the Supreme Court of the District of Columbia sitting in banc. Prior to the change, appeals in ex parte and interference cases could be taken to any individual judge of that court selected by the appellant. Thus the jurisdiction rested in the court as an appellate tribunal in such cases. The revision abolished appeal in interference cases. The remedy by bill in equity in both types of appeals remained.

VI

AMENDATORY ACTS AFTER 1870

The revision of the Patent Act that occurred in 1874, as a part of the revision of federal laws, did not make any fundamental change since this was only a codification into the Revised Statutes.[19]

[18] 16 STAT. 198.

[19] REV. STATS. §§440-496, 4883-4936 (1874).

Since 1874 numerous acts modifying the patent laws have been enacted. These have made many changes in the law as it was passed in 1870 and incorporated in the Revised Statutes in 1874. Only a few of the changes will be noted.

In 1891 the review of decisions in infringement suits was substantially changed by the Judiciary Act, which created the federal Circuit Courts of Appeals.[20] The jurisdiction of the Circuit Court of Appeals substantially reduced the number of patent cases that reached the Supreme Court.

In 1893 the Court of Appeals for the District of Columbia was established[21] with power to review decisions of the Supreme Court of the District of Columbia, and appeals from the decisions of the Commissioner of Patents went directly to the newly constituted Court of Appeals in ex parte appeals and also in interference cases.

In 1897 the time for response to rejections of the Patent Office was reduced from two years to one year.[22]

In 1927 Congress abolished the appeal from the Board of Appeals to the Commissioner and restricted an applicant who had been refused a patent either in ex parte or interference case to a suit in equity in the district court with appeal to the Circuit Court of Appeals of the District of Columbia, or to a direct appeal to the Court of Appeals.[23]

In 1927 an act was passed changing the time-limit for response to Patent Office actions from one year to six months.[24]

In 1929 the appellate jurisdiction of the Court of Customs Appeals was enlarged to include direct appeals from the Patent Office in patent cases, and the title of the court was changed to United States Court of Customs and Patent Appeals, leaving jurisdiction in the District of Columbia Supreme Court (now the United States District Court for the District of Columbia), with appeal to the Court of Appeals, to entertain a bill in equity as an alternative remedy. In ex parte cases the applicant had the alternatives of a direct appeal or a suit in equity. In interference cases an appellant had the same choice, except that if the losing party proceeded by direct appeal the other party had the option to compel him to change to an equity suit.[25]

In 1930 Congress extended the scope of patentable subject matter to include inventions relating to asexually reproduced distinct and new varieties of plants, other than tuber-propagated ones.[26]

VII

ORGANIZATION OF THE PATENT OFFICE

Obviously, the statutory development of the fundamentals of the patent system and of the methods of procedure within the Patent Office and its relation to the courts has not dealt with the changes in personnel or internal organization of the

[20] 26 STAT. 826.
[21] 27 STAT. 434.
[22] 29 STAT. 692.
[23] 44 STAT. 1335.
[24] *Ibid.*
[25] 45 STAT. 1475.
[26] 46 STAT. 376.

Patent Office. The staff of the Office, which in 1836 numbered eight persons, has grown to almost two thousand. The industrial development during the history of the patent system in this country has imposed an increasing burden on the Patent Office in the examining of applications for letters patent. This, from time to time, has required changes in personnel and changes in the functions and duties performed by the various officials of the Patent Office.

The historical background of the development, however, leads to a clearer understanding of the purposes and functions of the present organization of the Office, which is a matter of current interest to those concerned with the system as now administered. This brings the discussion to the current organization of the Patent Office and to the manner in which that organization is integrated to perform the functions delegated to it under statutory authority.

The Patent Office as now constituted is a bureau within the Department of Commerce. By executive order in April, 1925, the Patent Office was placed under the general administrative jurisdiction and supervision of that Department (being transferred from the Department of the Interior, where it had been since 1849), and the Secretary of Commerce, while without appellate power over the Patent Office decisions, has direct administrative control of the Office.

The Commissioner of Patents is appointed by the President by and with the consent of the Senate. The duties of the Commissioner are generally to act as administrative head of the Office. He superintends the performance of all duties respecting the granting and issuing of patents; exercises general administrative supervision over the entire work of the Office; prescribes rules, subject to the approval of the Secretary of Commerce, for the conduct of proceedings in the Patent Office, and for the recognition of attorneys and agents practicing before the Office; and generally performs such other duties as are requisite to the administration of the Patent Office in the performance of the functions assigned to it by law.

One first assistant commissioner, two assistant commissioners, and nine examiners-in-chief also are appointed by the President, subject to confirmation by the Senate. The duties of the assistant commissioners are those assigned to them by the Commissioner, and when performing duties relating to the Office of the Commissioner they act with the same authority as the Commissioner.

The examiners-in-chief, together with the Commissioner and the assistant commissioners, constitute a Board of Appeals. The duty of this board is to hear and decide appeals from adverse decisions of examiners upon applications for patent. Final decisions of the Board of Appeals, as has been mentioned, are reviewable either by the Court of Customs and Patent Appeals upon direct appeal or by a civil action in the United States district court having jurisdiction. If an appeal is taken to the Court of Customs and Patent Appeals and such appeal is pending or has been decided, the remedy by a civil action is not available.

All other officers, clerks, and employees of the Patent Office are appointed by the Secretary of Commerce upon the nomination of the Commissioner of Patents.

The solicitor and the law examiners constitute the legal staff of the Patent Office. This staff has charge of all litigation in which the Patent Office has an interest. These matters include appeals to the Court of Customs and Patent Appeals and suits against the Commissioner in the district court. This staff also investigates legal and legislative matters for the Commissioner, and performs such other duties with respect to matters coming before the Patent Office as may from time to time be assigned to the staff by the Commissioner.

The examining corps of the Patent Office as now constituted is divided into five groups, a number of divisions being assigned to each group, and each group headed by a supervisory examiner.

One of the primary duties of the supervisory examiners is to coordinate the formal procedures among the examining divisions with the objective of obtaining uniformity of action among the several examining divisions; to insure proficiency of the examining operations; to insure as far as practicable uniform application of Patent Office policies, rules, and directives; and to act on such matters of a technical nature as are delegated to them.

The examining staff of the Patent Office is divided into numbered examining divisions, currently sixty-nine, and a design division. Each division is in charge of a primary examiner and such assistant examiners as may from time to time be assigned to the division staff. One of the assistant examiners is designated as an assistant chief of a division and acts as chief in the absence or inability of the primary examiner.

The principal duties of the primary examiner of each division are to direct, review, and coordinate legal, scientific, and administrative operations of his staff; to insure the uniform observance and application of statutes, rules, decisions, directives, and policies relating to the examining operation; to develop and maintain the productivity and efficiency of operations; and to decide questions or make recommendations as required in certain specific matters referred for consideration by appropriate officials of the Patent Office. The primary examiner has responsibility for all actions on pending applications, and for allowance of patents issuing from his division. He also, through the division staff, determines the formal sufficiency of applications for patent; the legal patentability of claims submitted by the applicant, based on search of the prior art; and consideration of all matters relating to the merits of the application. As a result of such procedure he either allows or rejects claims. He institutes actions for determination of priority, and determines certain preliminary issues raised by interfering parties. If applications for patent are rejected either in whole or in part, he prepares statements, from the factual and legal aspects, for consideration of the Board of Appeals; and he performs such other incidental duties as are required for the proficient administration of the division.

The Board of Patent Interferences, comprised of examiners of interferences and assigned members, has the function of final determination within the Patent Office of questions of priority of invention decided as a result of *inter partes* interference

proceedings. These proceedings include consideration of factual issues developed by depositions and are quasi judicial in nature. They are conducted under the Rules of Practice. A party against whom an adverse decision is made by the board has the right of appeal directly to the Court of Customs and Patent Appeals or the remedy by bill in equity, as in cases of ex parte decisions of the Board of Appeals, except that the prevailing party has the option to require the losing party to proceed by bill in equity.

As a part of the patent-examining operation there is included a classification group whose function it is to develop and insure the effectiveness of the application and use of a system for the classification of prior public scientific and technological art required for the search operation of the examining corps. This group also has final responsibility for insuring the uniform application of the law and practices governing requirements for the division of patent applications where claims to more than one invention are asserted in an application.

In addition to the patent-examining operations, there are numerous administrative functions necessarily incident to the conduct of the business of the Office. In general the administrative duties are performed by the Executive Office, in charge of an executive officer. The function of the executive officer is to plan, promulgate, and carry into execution policies and programs relating to administrative functions within the Patent Office. He is responsible for the maintenance and performance of the services to the public incident to the general responsibilities of the Office. In order to carry out these duties, the Executive Office is divided into the Financial, Personnel, Administrative Management, Administrative Services, Budget, and Patent Services Divisions. The Administrative Services Division is further subdivided into Correspondence and Mail, Office Services, Patent Copy Sales, and Manuscript and Lithograph Branches. The Patent Services Division is subdivided into Application, Assignment, Docket, Drafting, Issue and Gazette, and Scientific Library Branches.

The titles of the administrative divisions and branches are sufficiently indicative of the scope of their respective functions to reveal the purposes of the organization in the integrated operation of the Office. Generally speaking, the administrative offices deal with all of the business functions connected with the operation of the Patent Office, the routine handling of correspondence with the public, and the proper routing of official communications relating to the processing of applications, from the time of their receipt until the jurisdiction of the Patent Office in relation to them ends. The Executive Office also has supervision of the mechanical details of the issuance of patents after the applications have been allowed, of the preparation and distribution of the publications of the Patent Office, and of the reproduction of its records. The maintenance and operation of the Patent Office Library and Search Room also are under the general supervision of the Executive Office.

The foregoing outline reveals that in order to handle patent applications cur-

rently approximating 80,000 a year a complex organization is required. The functions of the Office, however, have been integrated in such a manner as to simplify as far as possible the functions and services that the Patent Office performs for the public.

In summary, the foregoing review of the over-all method of procedure in the processing of patent applications will serve to emphasize the purposes for which the Patent Office exists and to reveal its importance as the fountainhead from which the patent grant originates.

BOOK REVIEWS

With this issue LAW AND CONTEMPORARY PROBLEMS begins, on an experimental basis, the publication of reviews of recent books. Such an extension of coverage constitutes a departure from the established practice whereby each issue is devoted exclusively to a symposium on a single subject; and an added service of this kind could hardly be justified, in view of the excellent commentaries already provided by the law reviews, if the purpose were simply to review law books. The essential characteristics which have distinguished LAW AND CONTEMPORARY PROBLEMS, however, have been its concentration on the pervasive problems of modern society and its unremitting effort to bring to bear, in the consideration of those problems, not only the wisdom and the skills of the legal profession but also the companion qualifications of those who, sharing the lawyer's concern and responsibility, work toward the same ends in the fields of economics, politics, history, sociology, philosophy, and the other disciplines. The new book section will be in keeping with this tradition. The focus will be on social problems of breadth and significance, and the objective will be illumination from every available source. The books selected for review will be those which deal with problems that concern the lawyer, but not the lawyer alone. The authors will bring to the solution of these problems diverse techniques, backgrounds, points of view: sometimes the equipment of the law, sometimes that of another social science, sometimes both. The reviewers will be men, of whatever specific training, who appreciate the importance of breaking across the barriers of specialization and pooling human resources for a common purpose.

This section may, then, from time to time be the means of bringing to the attention of lawyers a book which constitutes an important contribution by a worker in another field to the solution of "legal" problems; similarly, it may be the means of bringing to social scientists the aid of penetrating legal analysis of problems which they regard as their own. If in this way it can contribute even a little toward that coordination of skills which is such a necessary condition of social progress, the experiment will have been amply justified. If, by assisting a deeper insight into problems of the contemporary social order, the department adds to the interest and usefulness of LAW AND CONTEMPORARY PROBLEMS, the justification will be complete.

To inaugurate the book-review section, we asked Judge Jerome Frank to discuss a recent collection of the writings of Benjamin N. Cardozo. We invited Judge Frank to disregard the limitations of the conventional book-review form and to write a comprehensive reevaluation of Cardozo's contribution to the understanding of that complex phenomenon, the judicial process. The result is the stimulating commentary which follows.

CARDOZO AND THE UPPER-COURT MYTH

JEROME FRANK*

> The practical is disagreeable, a mean and stony soil, but from that it is that all valuable theory comes.[1]
>
> [The] first step toward improvement is to look the facts in the face.[2]

I

There has recently been published a volume, *Selected Writings of Benjamin N. Cardozo,*[3] which every thoughtful lawyer and judge will want ready at hand. It will repay constant re-reading. It includes nearly all Cardozo's extra-judicial writings, notably *The Nature of the Judicial Process,* first published in 1921, and *The Growth of the Law,* first published in 1924.[4] In these two books, one of our most eminent appellate judges set forth his legal philosophy. More important, he showed how this philosophy aided him in his judicial work, and, in that connection, disclosed some of the intimate details of upper-court techniques. I say "more important" because, before Cardozo, no judge, with the exception of Holmes, had been similarly candid. Cardozo's frankness emboldened others, lawyers and judges, to be less diffident in thinking about and commenting on courthouse ways.[5]

He did not confine himself to a description of what appellate judges do. He told, also, what they ought and ought not do. While wisely indicating the proper limits of judicial legislation, he exhorted these judges to put moral ideals into practice. His descriptions and exhortations he both illustrated refreshingly by his own judicial opinions, and fortified by apposite reflections on a variety of legal and non-legal philosophies.

This sort of critical self-revelation by a judge was novel and exciting. Somewhat less novelty and inventiveness appear in the contents of his own philosophy—far less than in the off-the-bench writings of his great master, Holmes, all of which contain highly original insights. Cardozo, more productive than Holmes, was also more eclectic. But, as in the case of Cicero, brilliant eclecticism became itself creative.

It was tonic that a revered judge, by no means "radical," should boldly declare, "I take judge-made law as one of the realities of life."[6] To be sure, this had often been said previously,[7] once forthrightly (and with appropriate qualifications) by Holmes in a dis-

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[1] Holmes, Letter to Wu, January 31, 1926, reprinted in SHRIVER, HOLMES, HIS BOOK NOTICES AND UNCOLLECTED LETTERS AND PAPERS 184 (1936).

[2] Holmes, Introduction, RATIONAL BASIS OF LEGAL INSTITUTIONS (1923).

[3] Edited by Margaret E. Hall, and with a Foreword by Professor E. W. Patterson. New York: Fallon Law Book Company. 1947. Pp. xxiv, 456. $5.00.

[4] Also the following: THE PARADOXES OF LEGAL SCIENCE (1928); LAW AND LITERATURE (1931); JURISPRUDENCE (1932); and several other papers and addresses.

[5] I am here paraphrasing what I said more at length eighteen years ago; see FRANK, LAW AND THE MODERN MIND 236, 239 n. (1930).

[6] THE NATURE OF THE JUDICIAL PROCESS 10 (1921).

[7] See, *e.g.,* GRAY, THE NATURE AND SOURCES OF LAW §222 (1900); THAYER, A PRELIMINARY TREATISE ON EVIDENCE 319, 327, 331 (1898); DICEY, LAW AND OPINION IN ENGLAND 361-398, 483-484 (2d ed. 1914); Cohen, *The Process of Judicial Legislation,* 48 AM. L. REV. 161 (1914); DICKINSON, ADMINISTRATIVE JUSTICE AND THE SUPREMACY OF LAW 122 n. 22, 200 n. 23 (1922); WIGMORE, *The Judicial Function,* Editorial Preface to THE SCIENCE OF LEGAL METHOD xxx (1917).

Holmes had often expressed that idea before he became a Supreme Court Justice. See, *e.g.,* HOLMES, THE COMMON LAW 1, 5 (1881); Holmes, *Common Carriers and the Common Law,* 13 AM. L. REV. 609 (1879); Holmes, *The Path of the Law,* 10 HARV. L. REV. 457 (1897), reprinted in HOLMES, COLLECTED LEGAL PAPERS 166, 181 (1920).

For a list of eight Supreme Court Justices who have so said, see New England Coal & Coke Co. v. Rutland R. R., 143 F. 2d 179, 189, n. 31 (C. C. A. 2d 1944).

senting opinion[8] to which Cardozo acknowledged his indebtedness.[9] But many lawyers then regarded Holmes as queer and flighty. Holmes, too, had frequently noted that sometimes subconscious factors affected judges, that they sometimes decided cases intuitionally, that policy attitudes, too often entertained unconsciously, influenced decisions.[10] "The very considerations which the courts most rarely mention, and always with an apology," Holmes wrote as early as 1879, "are the secret root from which the law draws all the juices of life. We mean, of course, considerations of what is expedient for the community concerned. Every important principle which is developed by litigation is in fact and at bottom the result of more or less definitely understood views of public policy; most generally, to be sure, under our practice and traditions, the unconscious result of instinctive preferences and inarticulate convictions, but none the less traceable to public policy in the last analysis."[11] Again, however, it was important that such a judge as Cardozo should enunciate that thesis; especially valuable was it to have Cardozo say:[12] "Deep below consciousness are other forces, the likes and the dislikes, the predilections and the prejudices, the complex of instincts and emotions and habits and convictions, which make the man, whether he be litigant or judge. . . . There has been a certain lack of candor in much of the discussion of the theme, or rather in the refusal to discuss it, as if judges must lose respect and confidence by the reminder that they are subject to human limitations. . . . The great tides and currents which engulf the rest of men, do not turn aside in their course, and pass judges by."[13] Following Holmes, he sagely

[8] "I recognize without hesitation that judges do and must legislate, but they can do so only interstitially; they are confined from molar to molecular motions." Southern Pacific Co. v. Jensen, 244 U. S. 205, 221 (1917).

For similar qualifications, see, *e.g.*, New England Coal & Coke Co. v. Rutland R. R., 143 F. 2d 179, 189 (C. C. A. 2d 1944); Commissioner v. Beck's Estate, 129 F. 2d 243, 245-246 (C. C. A. 2d 1942); Guiseppi v. Walling, 144 F. 2d 608, 620-621 (C. C. A. 2d 1944).

[9] THE NATURE OF THE JUDICIAL PROCESS 69 (1921).

[10] See, *e.g.*, the following writings of Holmes; *Common Carriers and the Common Law*, 13 AM. L. REV. 609, 630, 631 (1879); THE COMMON LAW 1, 5, 35, 68, 116, 204-205 (1881); *The Path of the Law*, 10 HARV. L. REV. 457, 466-467 (1897); Frankfurter, *The Early Writings of O. W. Holmes, Jr.*, 44 HARV. L. REV 717, 719, 774, 779, 781, 791 (1931).; Vegelahn v. Guntner, 167 Mass. 92, 104, 106, 44 N. E. 1077 (1896); *cf.* Chicago B. & Q. Ry. v. Babcock, 204 U. S. 585, 598 (1907).

[11] Holmes, *Common Carriers and the Common Law*, *supra* note 10.

[12] THE NATURE OF THE JUDICIAL PROCESS 167-168.

[13] *Cf.* MONTAIGNE, Essays, Bk. II, c. 12 (1588): "The lawyers in our Palaces of Justice have a customary saying, referring to a criminal who happens to have a judge in good humor and an indulgent mood: *Gaudeat de bona fortuna*, 'let him rejoice in his good fortune!' For it is certain that we meet with judges who are at one time harsher, more captious, more prone to convict, and at another more easy-going, complaisant and more inclined to pardon. When Justice So-and-so leaves his house suffering from the gout, from jealousy or from resentment against his valet who has been robbing him, his whole soul dyed and steeped in anger, we cannot doubt that his judgment will be warped accordingly. That venerable Senate of the Areopagus used to sit in judgment by night, lest the sight of the litigants might corrupt their sense of justice. The very atmosphere and the serenity of the sky have some power to change us, according to these Greek lines quoted by Cicero,

'The minds of men oft with the weather change,
As the days, foul or fair, dark or serene. (Homer)'

"Not only do fevers, potions, and serious happenings upset our judgment; the least thing in the world will turn it like a weather-cock. And there is no doubt, though we are not conscious of it, that, if a continuous fever can prostrate our soul, the tertian fever will impair it to a certain extent, in proportion to its severity. If the apoplexy dims and totally extinguishes the light of our intelligence, we cannot doubt but that the influenza will blind it. And consequently, hardly for a single hour in life will our judgment chance to be in its proper trim, our body being subject to so many continual changes and stuffed with so many different springs of action that (I take the word of the physicians for it) it will be strange if there is not always one that shoots wide of the mark. Moreover, this infirmity is not so easily detected, unless it be extreme and quite past remedy; inasmuch as reason always walks

added: "The training of the judge, if coupled with what is styled the judicial temperament, will help in some degree to emancipate him from the suggestive power of individual dislikes and prepossessions."[14]

Interested in matters of policy, Cardozo was fascinated by cases presenting situations where gaps in the precedents existed, or by those which invited deviation from the precedents because the old doctrines had produced unduly harsh results. He delighted in portraying the "creative function" of the judges in such instances, a function Cardozo brilliantly performed in some of his landmark opinions.[15] Wisely, however, he warned repeatedly that those were "exceptional cases."[16]

Perhaps Cardozo's most original suggestion was that a judge, in determining what legal rules or principles to apply in deciding a case, can and should employ four methods. Cardozo called them the methods (1) of philosophy (or analogy or logic), (2) of evolution (historical development), (3) of tradition (customs), and (4) of sociology (justice, morals, and social welfare).[17] This suggestion stimulates the advocate who aims to persuade judges, and supplies judges with some very useful tools in decision-making. These tools, to be sure, have some rough edges. As Professor Patterson says in his Preface to this volume, the four methods "were not exactly phrased or clearly delimited" by Cardozo. In particular, Cardozo's use of the word "logic" sometimes confuses, as when he speaks of a choice "between one logic and another,"[18] although what he really means, as the context shows, is this: The choice relates to the principle which becomes the major premise of the judge's logic—whether that premise be found in historical development or in tradition or in social welfare, or in a compromise between two or more of those three.

The following comments, in 1918, by Hoernlé (in a review of a book of legal essays[19] by divers writers, a book from which Cardozo often quotes) point up this common fallacy in which Cardozo indulges: "What logician ever demanded of a lawyer a procedure yielding artificial, unreasonable, unjust results? It is the lawyer, not the logician, who has insisted . . . on torturing the ever-novel, ever-changing forms of social and industrial life into a strait-jacket of concept and rules, which are . . . treated as rigid and fixed. . . . There is no logic known to me which forbids the recognition that 'legal systems do and must grow, that legal principles are not absolute, but relative to time and place'; or which demands the ignoring of the connection between law and economics. . . . But what makes the difference . . . between the kind of thinking that is rightly de-

crooked, lame and broken-hipped, and in the company of falsehood as well as of the truth. Hence it is difficult to discover her miscalculations and irregularities. I always call by the name of Reason that semblance of it which every man imagines himself to possess. This kind of reason, which may have a hundred counterparts around one and the same subject, all opposed to each other, is an implement of lead and wax, that may be bent and stretched and adapted to any bias and any measure; it needs but the skill to mould it. However well-meaning a judge may be, if he does not closely hearken to his own conscience, which few waste their time in doing, his leaning toward friendship, kinship, the fair sex and revenge, and not only things so weighty, but that fortuitous instinct which inclines us to favor one thing more than another, and which, without the permission of reason, gives us the choice between two like objects, or some equally empty shadow, may imperceptibly creep into his judgment, and prompt him to allow or disallow a cause, and give a tip to the scales."

[14] THE NATURE OF THE JUDICIAL PROCESS 176. *Cf.* Holmes, *The Path of the Law*, *supra* note 10; Vegelahn v. Guntner, *supra* note 10.

[15] Outstanding are McPherson v. Buick Motor Co., 217 N. Y. 382, 111 N. E. 1050 (1916); and Meinhard v. Salmon, 249 N. Y. 458, 164 N. E. 545 (1928).

[16] See, *e.g.*, THE NATURE OF THE JUDICIAL PROCESS 165; JURISPRUDENCE (as reprinted in the present volume) 7, 20.

[17] THE NATURE OF THE JUDICIAL PROCESS 30.

[18] THE NATURE OF THE JUDICIAL PROCESS 41; THE GROWTH OF THE LAW 79-80 (1924).

[19] THE SCIENCE OF LEGAL METHOD (1917).

nounced as formalism, logic-chopping, hair-splitting, . . . and the kind of thinking which our authors seek to secure . . . by the introduction of historical, sociological, psychological considerations? *The difference is material, not formal.* Formally, thinking is good or bad, according as the conclusion does, or does not, follow from the premises. Materially, thinking is good or bad, according as the premises from which conclusions are drawn are more or less complete as measured by the whole range of the problem, or more or less relevant to the task and the purpose in hand. What our authors criticize as bad logic is really bad premises, not a faulty technique in deducing conclusions, but a faulty subject matter. . . . What our authors call for, and seek to secure, is better premises, a fuller and completer range of *material* considerations out of which to elicit 'substantial justice' . . . . The solution depends on what view we take of the . . . factors which ought to be considered, if concrete justice is to be secured in each particular case. . . . No logician can legislate for the lawyer on such material points."[20]

But if, in company with many other legal philosophers, Cardozo sometimes went astray in his conception of logic,[21] that was a minor fault. Despite it, these books constitute invaluable treatises on upper-court judging, treatises which almost certainly will never be equalled. I can testify that they have proved an indispensable guide to the perplexed for at least one upper-court judge, and, for him, an inexhaustible source of moral inspiration. To avoid any possible misunderstanding of the balance of this article, let me say, then, that I join whole-heartedly with the many who hail Cardozo as one of our greatest appellate judges and who appraise his books as priceless contributions to a comprehension of what appellate courts do.

By the way of preface to what follows, I quote the following: "That he [Cardozo] was a great judge, that he advanced the progress of keen thinking about the purposes and workings of the courts, is beyond question. That he was a great person, too, is undeniable. . . . Surely here was a wise and good man, entitled to veneration. But he was neither an immortal nor a mortal god. Being human, he escaped perfection. . . . No man is great in all his aspects. Diderot observed that 'everything even among the greatest of all the sons of men is incomplete, mixed, relative; everything is possible in the way of contradictions and limits; every virtue neighbors elements of uncongenial alloy; all heroism may hide points of littleness; all genius has its days of shortened vision.' Unmitigated or monolothic praise of the great departed often encourages imitation of their errors and weaknesses. . . . If it should be said that it is presumptuous for so unaccomplished a person to criticize . . . one so great as Cardozo, my answer will be this: It is a prized democratic maxim that even an alley cat may look at a king; it was an untutored boy who saw the true nature of the emperor's clothes."[22]

II

Since Cardozo, when at the bar, was principally an upper-court lawyer, and, in his long tenure on the bench, an upper-court judge (except for a few months), it would

[20] Hoernlé, Book Review, 31 HARV. L. REV. 807, 810-811 (1918).

[21] In THE GROWTH OF THE LAW 62-63, Cardozo, for a moment, sensed this error. Referring to his four methods, he said: "No doubt there is ground for criticism when logic is represented as a method in opposition to others. In reality, it is a tool that cannot be ignored by any of them. The thing that counts chiefly is the nature of the premises. We may take as our premise some pre-established conception or principle or precedent, and work it up by an effort of pure reason to its ultimate development, the limit of its logic. We may supplement the conception or principle or precedent by reference to extrinsic sources, and apply the tool of logic to the premise as thus modified or corrected." But then he fell back into the old error, for he added: "The difference between the function of logic in the one case and in the other is in reality a difference of emphasis. The tool is treated on the one hand as a sufficient instrument of growth, and on the other as an instrument to cooperate with others. The principle of division is a difference, not of kind but of degree."

[22] Anon Y. Mous, *The Speech of Judges: A Dissenting Opinion*, 29 VA. L. REV. 625, 629-630 (1943).

have been understandable if he had avowedly limited himself to writing of "The Nature of the Appellate Phases of the Judicial Process." In that event, these books would have deserved the all but uniform praise they have received. But I think they merit a marked criticism almost never voiced: unfortunately, Cardozo purported, without qualification, to describe the entire judicial process. Because of his reputation, the very excellence of his teachings in the narrow appellate field, to which they legitimately pertain, has tended to dampen inquiry in a far larger field where inquiry is far more necessary.

For Cardozo completely by-passed the operations of the trial courts, as if to say either that they had little significance or that their unique decisional activities and distinctive functions had no place in that process. Although, before he used the phrase, the "judicial process" had been defined to include "all the steps and proceedings in a cause from its commencement to its conclusion,"[23] Cardozo excluded, as if non-existent, the events occurring in the trial stage of thousands of cases, events which occur in trial courts but never in upper courts: the witnesses testifying, the lawyers examining and cross-examining the witnesses, the jurors listening to the witnesses and to the arguments of the lawyers, the trial judge (when sitting without a jury) passing on the credibility of the witnesses' oral testimony.[24] The omission of all these phenomena—familiar to every trial judge, trial lawyer, and newspaper reporters who "cover the courts"—renders Cardozo's exposition, as a description of how courts work, seriously misleading. Eminently satisfactory as an account of appellate-court ways, it is bizarre as an account of trial-court ways—as bizarre as would be an account of manners at Buckingham Palace if taken as also applicable to rush-hour behavior in the New York subways. Nor was Cardozo's misdescription inadvertent. On the contrary, as we shall see, he grew irritated when his grave omission of trial-court happenings was called to his attention, and did his best to discourage efforts to correct his description.

The omission was grave for this reason: because of it, Cardozo, with seeming justification, could give credence to a gross over-estimation of the reliability and excellence of our courthouse products. "Nine-tenths, perhaps more, of the cases that come before a court," he wrote, "are predetermined—predetermined in the sense that they are predestined—

[23] See United States v. Murphy, 82 Fed. 893, 899 (D. Del. 1897); State v. Guilbert, 56 Ohio St. 575. 47 N. E. 551, 557 (1897); Blair v. Maxbass Security Bank, 44 N. D. 12, 176 N. W. 98, 100 (1919); *cf.* Wayman v. Southard, 10 Wheat. 1, 27 (U. S. 1825).

Some persons seem to think Cardozo invented the phrase. These citations show that he did not. Nor did he originate its use to denote the function of judging. In that respect, he had been anticipated by Wigmore who, in 1917, thus employed it. Wigmore distinctly spoke of the "judicial process." See WIGMORE, Editorial Preface to THE SCIENCE OF LEGAL METHOD (1917). He described it (xxviii) as "the process . . . of deciding, by an agent of state power, a controversy existing between two individuals (or the State and the individual) by rational (not merely personal) considerations, purporting to rest on justice and law (*i.e.*, the community's general sense of order)."

Anyone acquainted with Wigmore's PRINCIPLES OF JUDICIAL PROOF (1913) does not need to be told that, in such official dispute-deciding, he included all that Cardozo excluded. *Had Cardozo followed Wigmore's lead, his books would not have been subject to the criticisms made in this paper.*

Pound, writing in 1917 of "the judicial process of finding the law," came closer to Cardozo's definition. See Pound, *Courts and Legislation,* in THE SCIENCE OF LEGAL METHOD 202, 223 (1917). Pound says (208): "Judicial decision of a controversy, *the facts being found,* has been said to invoke three steps: (1) finding the rule to be applied, (2) interpreting the rule, (3) applying the rule to the cause." The words I have italicized (*i.e.,* "the facts being found") refer to an element in decision-making which Cardozo fails to analyze.

[24] Occasionally an upper court receives evidence not received in the trial court, or the upper court acts as a trial court, *e.g.,* when a case is within the original jurisdiction of the United States Supreme Court. But virtually never does the upper court listen to witnesses; if the evidence is oral testimony, it is heard by a master or referee and reported, in a transcript, to the upper court.

It is notable that, when an upper court thus becomes a direct fact-finder, the judges of the court may flatly disagree with one another as to the facts. See United States v. Shipp, 214 U. S. 386 (1909).

their fate established by inevitable laws that follow them from birth to death."[25] Substitute "upper court" for "court" in that sentence, and it is perhaps not too wide of the mark. It cannot possibly stand up, however, as a characterization of our entire court system. In most instances, when a case has already been decided by a trial court, a capable lawyer can accurately predict what, if an appeal is taken, will be the decision of the upper court. But (for reasons I shall presently canvass) no such easy prediction can be made of most trial-court decisions. Cardozo, by restricting the judicial process to appellate courts, presented a picture of the workings of our court system as, in the main, just, reliable, and steady. That highly inaccurate picture afforded smug satisfaction to much of the legal profession. For, if Cardozo was correct, the judicial process needed comparatively little improvement.

Now the truth is that, for most persons who become involved in litigation, what trial courts do has far more significance than has the performance of upper courts. For not only is the overwhelming majority of decisions not appealed, but in most of the relatively few that are appealed—probably not more than 6 per cent annually—the appellate courts accept as final the trial-court findings of fact.[26] This they do because of a circumstance which accounts for and derives from a unique characteristic of our trial courts: a jury, or a trial judge in a non-jury case, can observe the demeanor of the orally testifying witnesses. The appellate judges cannot. Observation of witnesses' deportment is by no means an infallible method of determining the accuracy of their testimony; but, no better method having been devised, such observation of witnesses, whenever it is possible, is generally deemed essential in our legal system. Judge Learned Hand summarized views often previously expressed by our courts when he said that "that complex of sight and sound, from which we make our conclusions in a courtroom, is in large part eviscerated when reduced to the printed word." As Wigmore put it, "The witness' demeanor . . . is always assumed to be in evidence." A "stenographic transcript," wrote Judge Ulman, ". . . fails to reproduce tones of voice and hesitations of speech that often make a sentence mean the reverse of what the mere words signify. The best and most nearly accurate record is like a dehydrated peach; it has neither the substance nor the flavor of the fruit before it was dried."[26a]

It follows that the decisions of trial courts—in which courts alone can the witnesses be seen and heard—determine the fate of, say, 98 per cent of all litigated cases. That 98 per cent Cardozo usually disregarded. For him, a 2 per cent tail wagged a 98 per cent dog. It was as if a meteorologist had founded his studies of weather solely on weather conditions at the equator, or as if a physician had insisted that human health must be studied exclusively in terms of the health of twenty-year-old males. Cardozo, generalizing from wholly insufficient material, was guilty of an unwarranted extrapolation. He basically erred in considering the "facts" of cases as "data," as "given" to the courts. That

[25] THE GROWTH OF THE LAW 60.

[26] This is usually true where the testimony is oral, no procedural errors occurred at the trial, and the findings are rationally inferable from *some* of the evidence. Such is the general rule in the federal courts. Slight divergences exist in some jurisdictions, as, for instance, in New York where the appellate courts have a limited power to review the facts. The highest New York court, in which Cardozo sat for years, exercises that review power sparingly. See Cohen, *The Reluctance of the New York Court of Appeals to Review Facts*, 44 COL. L. REV. 352 (1944).

For discussions of appellate-court attitudes towards trial-court fact-finding, see, *e.g.*, POUND, APPELLATE PROCEDURE IN CIVIL CASES 5-6, 28 (1941); Clark and Stone, *Review of Findings of Fact*, 4 U. OF CHI. L. REV. 190 (1937); Clark, *The New Illinois Practice Act*, 1 U. OF CHI. L. REV. 209 (1933); ORFIELD, CRIMINAL APPEALS IN AMERICA, c. 4 (1939).

[26a] For Judge Hand's statement, see Petterson Lighterage & T. Corp. v. New York Central R. R., 126 F. 2d 992, 996 (C. C. A. 2d 1942); for Wigmore, see JOHN H. WIGMORE, EVIDENCE §946 (3d ed. 1940); for Ulman, see JOSEPH N. ULMAN, THE JUDGE TAKES THE STAND 267 (1933).

is true, on the whole, in the appellate phase of that process. It is emphatically not true in its trial phase. The "facts" of cases (as I shall try to show) are not the facts as they actually occurred, not things which exist outside of court. They are usually processed by the trial courts, are their peculiar products. As Judge Olson recently said, "trials are commonly called law suits, but it often seems they might better be called fact suits."[26b]

Upper courts concern themselves chiefly with the legal rules and principles. So, too, did Cardozo in his books. As a consequence, for him the judicial process signified little more than the application to facts, already "found," of (1) established rules and principles, or (in occasional "exceptional cases") of (2) new rules and principles brought into being through the "creative" activities of the courts. The same was true of Cardozo's conception of "jurisprudence." His definitions of "law"—composed in part of ingredients taken from Holmes[27] and from Pollock and Maitland[28]—included non-legal materials, but did so only in so far as they contributed to such legal concepts or generalizations: "We shall unite in viewing as law," he wrote, "that body of principle and dogma which with a reasonable measure of probability may be predicted as *the* basis for judgment in pending or future controversies."[29] I underscore "the," as it high-lights Cardozo's perspective: The "body of principle and dogma," he is saying in effect, should alone be regarded as "the basis of judgment." Nothing is said to indicate that the ascertainment of the facts of a lawsuit also enters into the making of a judgment, so that to predict future judgments one must be able to predict what facts will be ascertained in future cases.

What I am driving at grows clearer in his other definitions: "A principle or rule of conduct so established with reasonable certainty that it *will be enforced by the courts* if its authority is challenged, is . . . a principle or rule of law."[30] Subsequently he expanded this statement into a general definition of "law." After noting that "that word stands for a good many notions," he added: "I find lying around loose, and ready to be embodied into a judgment according to some process of selection to be practiced by a judge, a vast conglomeration of principles and rules and usages and moralities. If these are so established as to justify a prediction with reasonable certainty that *they will have the backing of the courts* in the event that their authority is challenged, I say that they are law. . . ."[31] It would waste time to argue whether these definitions of the hopelessly ambiguous word "law" are preferable to one of a dozen or more others.[32] But it is distinctly worth while to point out that his definitions contain phrases which Cardozo never bothered to explain although they shriek for elucidation. I refer to the phrases, *"will be enforced* by the courts," and *"will have the backing* of the courts." If you peer behind those words, you will be gazing at an immense legal jungle (partly explored by Wigmore, in his *Principles of Judicial Proof,* and by others in books written for practicing trial lawyers),[33] a jungle Cardozo disdained to enter—the jungle of trials and trial-court fact-finding.

[26b] Olson, *Observations from a Trial Bench,* 22 WASH. L. REV. 67, 69 (1947).

[27] Holmes, *The Path of the Law,* 10 HARV. L. REV. 457 (1897), reprinted in HOLMES, COLLECTED LEGAL PAPERS 167, 172-174 (1920). Cardozo quotes the passage: GROWTH OF THE LAW 44-45.

[28] I POLLOCK & MAITLAND, HISTORY OF ENGLISH LAW, Introduction xxv (2d ed. 1899).

[29] THE GROWTH OF THE LAW 44.

[30] THE GROWTH OF THE LAW 52 (emphasis added).

[31] *Jurisprudence,* An Address before the New York State Bar Association, January 22, 1932, printed in this volume p. 7, at p. 18 (emphasis added).

[32] That the word "law" is so ambiguous that disputes about its meaning end in futility, see Frank, *Are Judges Human?* 80 U. OF PA. L. REV. 17, 45 (1931); FRANK, IF MEN WERE ANGELS 279-284 (1942).

[33] See, *e.g.,* HARRIS, HINTS ON ADVOCACY (Am. ed. 1892); H. W. TAFT, WITNESSES IN COURT (1934); GOLDSTEIN, TRIAL TECHNIQUE (1935); MOORE, FACTS (1898).

Without trial-court fact-finding, judicial "enforcement" of the legal rules[34] seldom gets under way. For a court "enforces" or "backs up" a rule only if the court, in some specific lawsuit, holds that the facts which invoke that rule are the facts of that specific case.[35] If, and only if, the court so holds, does it apply that rule to those facts. It follows that a rule is not "enforced" unless a trial court has "found" or purports to have "found" the pertinent facts, *i.e.*, those facts to which the rule applies.[36] It also follows that, in almost any particular case—and therefore in almost all cases—trial-court fact-finding is fully as vital as any legal rule. To the human beings whose specific lawsuits the courts decide, the determinations of the facts have the utmost significance. If the facts are found against a party, he loses. The facts of a case, as found, furnish the ticket to the decision.[37] "No tickee, no washee." For a legal rule is only a conditional statement. It says, "If the facts are thus and so, then these legal consequences ensue."

One would suppose, then, that a study purporting to cover the judicial process, a treatise on "jurisprudence," would include an extensive discussion of the methods of trial-court fact-finding and of the influences that affect it; would explain the multitude of factors involved in it; would emphasize its ineradicable chanciness and uncertainty in most cases, due to the unavoidable fallibility of witnesses, jurors, and trial judges.

Cardozo, however, ignored those topics, and without apologies.[38] This is the more remarkable since, in the single brief passage in which he mentions the function of facts in litigation, he acknowledges their undeniable significance: "In what I have said," he wrote in 1924,[39] "I have thrown, perhaps too much into the background and the shadow the cases where the controversy turns not upon the rule of law, but upon its application to the facts. Those cases, after all, make up the bulk of business of the courts. They are important for the litigants concerned in them. They call for intelligence and patience and reasonable discernment on the part of judges who must decide them.[40] But they leave jurisprudence where it stood before." A few lines later, he says that "jurisprudence remains untouched, regardless of the outcome" of such cases.

Truly, an astonishing attitude. "Jurisprudence," as Cardozo envisions it, stands aloof from those decisions, "important to litigants," which, according to Cardozo himself, "make

[34] For convenience, I shall, from now on, use "rule" to include a principle, a standard, a custom, a usage, or a "morality" which a court enforces.

[35] Of course, sometimes the parties stipulate the facts or one party admits that the facts are as stated by his adversary.

[36] When I say "purports to find," I refer to a complicated subject:

1. Juries usually return general verdicts which do not reveal what facts were found. Trial judges, sitting without juries, are permitted in some jurisdictions to render judgments without special findings or opinions; such judgments include the equivalent of general verdicts.

2. Even when special findings are supplied by a jury or trial judge, they merely supply a statement of belief as to what the facts are; this statement may not correctly report the actual belief.

Consequently, a trial court may seem to be, or be said to be, enforcing a rule when in truth it is not doing so.

These complications, which render my comments on "findings" in the text over-simplifications, are discussed in some detail in Frank, *What Courts Do In Fact*, 26 ILL. L. REV. 645 (1932), and, more tersely, in FRANK, IF MEN WERE ANGELS 269-271 (1942), and Frank, *A Plea For Lawyer-Schools*, 56 YALE L. J. 1303, 1307 n. 7 (1947).

[37] *Warning:* See the preceding footnote.

[38] *Warning:* The fact-finding here discussed, which relates to the particular past events that are the subject of a dispute in a trial, is of course distinct from that fact-finding which relates to "background" or "social and economic facts" of the kind to which Brandeis gave prominence in his famous briefs and judicial opinions. In the latter kind of fact-finding Cardozo had a vivid interest. See, *e.g.*, THE GROWTH OF THE LAW 117, 241. That even such fact-finding is not free of subjectivity, see Frank, *A Plea for Lawyer-Schools*, 56 YALE L. J. 1303, 1334-1335 (1947).

[39] THE JUDICIAL PROCESS 163.

[40] Jury cases are not mentioned.

up the bulk of the business of the courts." Why this snobbish aloofness on the part of "jurisprudence" when so much is at stake for our citizens? Because, in Cardozo's view, "jurisprudence" is indifferent to anything other than the legal generalizations, the legal rules and principles. Since the "judicial process," for Cardozo, is substantially co-extensive with "jurisprudence," his exposition of the nature of that process likewise cold-shoulders, as unworthy of consideration, the "bulk of the business of the courts."

Having thus artificially circumscribed the judicial process (by admittedly excluding from it the bulk of judicial business), Cardozo reaches a conclusion as to its workings which necessarily is artificial but which affords him much comfort: since (1) but a small percentage of the legal rules lack certainty, and (2) certainty in the judicial process means certainty in rules, it is demonstrable (according to Cardozo's reasoning) that (3) the extent of uncertainty in the judicial process is small. This conclusion (which is correct in respect of appellate courts but otherwise false) has a logical corollary; *i.e.,* experienced, able lawyers, Cardozo implies, can usually predict court decisions with accuracy: he declared that most rules, even those which allow courts some discretion, "have such an element of certainty that, in a vast majority of instances, prediction ceases to be hazardous for the trained and expert judgment."[41] In other words (so Cardozo apparently maintains) competent lawyers can predict the outcome of most lawsuits before trial.

Not only that. "Law," as Cardozo defines it, shows up as largely stable, since "law" consists of the rules. Here, apparently, is cheer for the layman, since, says Cardozo, the "law" will, on the whole, conform to the layman's "reasonable expectations."[42]

The fatal vulnerability of that thesis,—*i.e.,* that legal certainty and the predictability of decisions are measurable by, and correspond to, the certainty of the rules—can be made clear by exposing the error in one of Cardozo's remarks about facts. After noting that the issues in most lawsuits relate "not to the law, but to the facts," he adds: "In countless litigations, the law is so clear that the judges have no discretion." *But trial courts—juries or trial judges trying cases without juries—have an amazing discretion in finding the facts.*[43] When, as happens in most trials, the testimony is oral and the several witnesses disagree concerning the facts, the trial court's discretion in the determination of the facts—based on a selection of some of the witnesses as credible and others as not—usually is utterly uncontrollable. Indeed, the jury system has often been praised just because juries, through general-verdict fact-finding, have a virtually unregulated power

[41] *Jurisprudence, supra* note 16, at 22.

[42] *Id.* at 29. See also THE GROWTH OF THE LAW 102, where Cardozo, with apparent approval, quotes Pound's statement: "The law enforces the reasonable expectations arising out of conduct, relations and situations."

[43] See FRANK, IF MEN WERE ANGELS 91-92 (1942); Frank, *Words and Music,* 47 COL. L. REV. 1259, 1273-1274 (1947); WIGMORE, EVIDENCE §2032, 244-245 (3d ed. 1940); Millar, in ENGLEMANN, HISTORY OF CONTINENTAL CIVIL PROCEDURE 44 (1927).

In Nash v. Fries, 129 Wis. 120, 108 N. W. 210, 211 (1906), the court said that "by many authorities, the word 'discretion' is properly enough used to express that judicial judgment in discriminating as to weight and cogency between different witnesses . . . which must be exercised in reaching any conclusion of fact from evidence."

In Woey Ho v. United States, 109 Fed. 888, 890 (C. C. A. 9th 1901), the court said: "The question whether a witness is credible must ordinarily be determined by the tribunal before whom the witness appears, and in the decision of which that tribunal must necessarily be vested with a very wide discretion."

Cf. Weiler v. United States, 323 U. S. 606, 608 (1945): "In gauging the truth of conflicting evidence, a jury has no simple formulation of weights and measures upon which to rely. The touchstone is always credibility; the ultimate measure of testimonial worth is quality and not quantity. Triers of fact in our tribunals are, with rare exceptions, free in the exercise of their honest judgment to prefer the testimony of a single witness to that of many."

Cf. ARISTOTLE, RHETORIC, Bk. I, c. 1, 1354b.

to nullify the legal rules;[44] and much the same power is possessed by a trial judge who sits without a jury.[45]

The exercise of this discretion will often paralyze prediction. In the first place, witnesses, being human, are humanly fallible. No one has discovered or invented any instrument or objective method by which a jury or trial judge can pick out those of the witnesses, if any, who accurately observed the facts in dispute, accurately remembered what they observed, and accurately (without bias or prejudice or perjury) report in court their memories of what they observed.[46] Conventional jurisprudence, in turning its back on that difficulty, relies on an implicit postulate or axiom—the Truth-Will-Out Axiom, *i.e.*, that bias, mistakes and perjury are infrequent, abnormal, and that, when they occur in litigation, they are usually uncovered, so that they have slight effects on the outcome of lawsuits. That axiom, completely out of line with observable trial courtroom realities, should be repudiated.[47] Once it is repudiated, it becomes obvious that, in the

[44] See, *e.g.*, Wigmore, *A Program For the Trial of a Jury Trial*, 12 AM. J. SOC'Y 166 (1929); see also discussion in FRANK, IF MEN WERE ANGELS 80-88 (1942); Pound, *Law In Books and Law in Action*, 44 AM. L. REV. 12, 18-19 (1910).

[45] See FRANK, IF MEN WERE ANGELS 97-99 (1942); Frank, *Words and Music*, 47 COL. L. REV. 1259, 1275 (1947); see also La Touraine Coffee Co. v. Lorraine Coffee Co., 157 F. 2d 115, 123-124 (dissenting opinion, C. C. A. 2d 1946).

[46] The fallibility of testimony and the difficulty of selecting honest, accurate testimony, are notorious. Here are a few remarks on the subject, chosen at random:

"From my experience as a man, a lawyer, a prosecuting attorney, and a judge, I am compelled to say that the most uncertain thing I know of is human testimony." CARTER, THE OLD COURT HOUSE 144 (1890).

"Thus with the best intentions at the outset, and knowing matters of importance to the cause, a nervous, apprehensive witness may retire suspected of the grossest perjury, and without relating a single matter as it occurred." ROBINSON, FORENSIC ORATORY 126 (1893).

"The liar . . . is far less dangerous than the honest but mistaken witness who draws upon his imagination. It is difficult to determine in the case of an honestly intentioned witness how much of his evidence should be discarded as unreliable, and how much accepted as true. . . . A distinguished lawyer testifying in a recent case was so careful to qualify every bit of his evidence that the jury took the word of a perjured loafer and a street-walker in preference." TRAIN, PRISONER AT THE BAR 228, 236 (2d ed. 1908).

"And so counsel and court find it necessary through examination and instruction to induce a witness to abandon for an hour or two his habitual method of thought and expression, and conform to the rigid ceremonialism of court procedure. It is not strange that frequently truthful witnesses are as a result misunderstood, that they nervously react in such a way as to create the impression that they are either evading or intentionally falsifying. It is interesting to account for some of the things that witnesses do under such circumstances. An honest witness testifies on direct examination. He answers questions promptly and candidly and makes a good impression. On cross-examination his attitude changes. He suspects that traps are being laid for him. He hesitates; he ponders the answer to a simple question; he seems to 'spar' for time by asking that questions be repeated; perhaps he protests that counsel is not fair; he may even appeal to the court for protection. Altogether, the contrast with his attitude on direct examination is obvious; and he creates the impression that he is evading or withholding. . . . The testimony of few witnesses is in accord in all particulars with statements of other witnesses previously examined. The questions asked by counsel, particularly on cross-examination, the nervousness or perhaps irritation incident to their novel situation and heightened by the austerity of the judge, the mental confusion resulting from an admission of error, extorted on cross-examination, even though it affects a matter of minor importance—such things as these often lead to changes in the testimony of a witness and may affect his credibility. It is not honesty alone, but the ability to withstand the effects of such influences that make a 'good witness.'" TAFT, WITNESSES IN COURT 20, 28 (1934).

"It would be correct, I think, to say that no witness can be expected to be more than 60% correct, even if perfectly honest and free from preconception." Eggleston, *Legal Development in a Modern Community*, in INTERPRETATIONS OF MODERN LEGAL PHILOSOPHIES 167, 182 (1947).

[47] For this axiom I have suggested elsewhere the substitution of the following: "Perjury, bias and mistakes in testimony are a normal part of many lawsuits. The true facts of a case are often not apprehended by judge or jury if the case is hotly contested and questions of fact are in issue. Fear of

selection of portions of the testimony on which to rely, the jury or trial judge must make a guess. In this guessy choice, on which fact-finding is constructed, there inheres much inscrutable, un-get-at-able subjectivity: Not only are the reactions of the witnesses, to the past events about which they testify, shot through with subjectivity. So, also, are the reactions of juries or trial judges to the witnesses. For the juries and trial judges are themselves but fallible witnesses of the witnesses.[48] Thus fact-finding encounters multiple subjectivity.

The truth, neglected by Cardozo & Co., is that the facts in dispute in a lawsuit are past events which do not walk into the courtroom; that those actual past "objective" events can be ascertained, at best, only through subjective reactions to the testifying witnesses' subjective reactions; and that, therefore, to speak of "finding" the "facts" is misdescriptive.[49] Therefore, my description of the nature of a legal rule needs revision: a legal rule means, "If the jury or trial judge (expressly or impliedly) says that it believes the facts are thus and so, and if there is some substantial evidence to justify that statement of belief, then these legal consequences ensue."

No third person can tell whether such statements correctly report the beliefs of the juries or trial judges (*i.e.*, whether the statements match their private beliefs); for it is not permitted to examine or cross-examine juries and judges.[50] But even if any such statement did correctly report such belief, no appellate judges could probe the belief to determine whether it matched the actual past facts, the "facts in themselves." For no one

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prosecution for perjury has small effect for several reasons: (a) Few persons are indicted for perjury; few perjurers can be convicted if indicted; and fewer still are convicted. (b) Perjurers are often heedless of possible future consequences. (c) Much false testimony is not the result of deliberate lying which would either justify or make possible conviction for perjury. Coaching of witnesses by crooked lawyers is often successful. Inadvertent coaching of witnesses by honest lawyers often occurs; it is an unavoidable result of the fact that witnesses, when interrogated by a lawyer in advance of trial, become aware of what the lawyer wants, if possible, to prove. A lawyer, before the trial begins, is often not aware of all the facts of his client's case. And even if he does know all the true facts, he does not know what liars, biased witnesses or mistaken witnesses will testify for the other side. And he cannot know whether false or mistaken testimony will be believed by the judge or jury. Wherefore, he cannot predict the outcome of any lawsuit before it has begun because he does not know what the testimony will be and what effect it will have. For perjured, biased or mistaken testimony often persuades judges and juries." Frank, *Mr. Justice Holmes and Non-Euclidean Legal Thinking*, 17 CORN. L. Q. 568, 588 (1932).

See that same article for several other axioms or postulates, implicit in conventional legal thinking, which should be discarded because contrary to easily observable courtroom conditions.

[48] For more ample discussion, see FRANK, LAW AND THE MODERN MIND 107-108 (1930); Frank, *What Courts Do in Fact*, 26 ILL. L. REV. 645 (1932); FRANK, IF MEN WERE ANGELS 72, 270-271 (1942); Frank, *A Plea for Lawyer-Schools*, 56 YALE L. J. 1303, 1307-1310 (1947); Frank, *Words and Music* 47 COL. L. REV. 1259, 1273-1276 (1947).

[49] That a trial court is like a historian attempting to "reconstruct" the past, and that, like every historian, it engages in a conjectural undertaking, see *In re* Fried, 161 F. 2d 453, 462 and n. 21 (C. C. A. 2d 1947).

[50] "Now remember that the judge's statement that the facts of the case are Q, R, and S means only that he thinks that the facts are Q, R and S. But how are we to know whether he is reporting correctly what he thinks the facts are? We can determine the truth of his statement [of what he thinks] only by knowing what actually went on in his mind. But it is very difficult to determine what goes on in the mind of any man. In the case of a witness on the witness-stand, cross-examination and other devices are available which may tend to show the witness' lack of veracity or inaccuracies, and may bring to light what the witness is really thinking or really thought. But cross-examination of judges is not permitted. If, then, (1) the judge's statement of 'the facts' of a 'contested' case is a statement of what the judge thinks and (2) that statement cannot be challenged, it follows that it is only through a knowledge of the judge's 'character' or 'personality' that one can obtain criteria for determining the correctness of his conclusion. And, unfortunately, that kind of knowledge is seldom available." Frank, *What Courts Do In Fact*, 26 ILL. L. REV. 645, 660-662 (1926) (see also 651 and 782-784); FRANK, IF MEN WERE ANGELS 269-271 (1942).

can formulate, in the form of rules, the bases of such a belief. The belief is "unruly," one might say. Long ago, Sir Henry Maine, in a passage which has largely escaped attention, pointed to the delicate task of a trial judge "in drawing inferences from the assertion of a witness to the existence of the facts asserted by him. It is in the passage from the statements of the witness to the inference that those statements are true, that judicial inquiries break down." It "is the rarest and highest personal accomplishment of a judge to make allowance for the ignorance and timidity of witnesses, and to see through the confident and plausible liar. Nor can any general rules be laid down for the acquisition of this power, which has methods peculiar to itself, and almost undefinable."[51] Wherefore, as there is no yardstick for measuring the accuracy of a trial court's finding of facts in a case where the testimony is oral and credibility is in issue, often the discretion used in reaching that finding cannot be controlled.[52]

You will search in vain in Cardozo's discourses on the judicial process for any mention of the huge measure of discretion vested in juries and trial judges with respect to the facts. (Indeed, nowhere did he refer to juries.) He wrote as if discretion in the judicial process consisted solely of discretion inhering in the rules or in the selection of rules. That perhaps explains why it never occurred to him to note that it is peculiarly true of jurymen and trial judges—when reacting at trials to witnesses who testify orally —that they are affected by "forces" which lie "deep below consciousness," the "likes and dislikes, the predilections and the prejudices, the complex of emotions and habits and convictions." In the upper courts, as Cardozo noted, those "forces" sometimes somewhat influence the choice of rules. In the trial courts, those "forces" influence, often immeasurably, the choice of facts which is within the wide discretion of jurors and trial judges.[53]

Since that choice is a guess, frequently induced by inscrutable factors, the lawyer, trying to predict a decision, engages in a baffling undertaking: he is trying to predict what facts will be "found," and therefore guessing the future guess of a jury or trial judge. Moreover, before a case is tried, the lawyer's guess often must be about the future guess of a jury, or trial judge, as yet unknown to the lawyer.[54] Necessarily, such a guess is wobbly. It would be wobbly even if all the legal rules and principles were as precise as a table of logarithms, as fixed as the North Star.

How true that is becomes obvious when one considers that in the great majority of suits (*e.g.*, negligence actions and the like) both sides agree as to the applicable rules, the disputes relating to the facts alone. In the light of such cases, it passes understand-

[51] MAINE, *The Theory of Evidence*, in VILLAGE COMMUNITIES 295, 317-318 (1872).

[52] See dissenting opinion in La Touraine Coffee Co. v. Lorraine Coffee Co., 157 F. 2d 115, 123-124 (C. C. A. 2d 1946), to the effect that, when a decision turns on the credibility of witnesses, a trial judge's finding of fact "is inherently subjective (*i.e.*, what he believes to be the facts is hidden from the scrutiny of others), his concealed disregard of evidence is [therefore] always a possibility. An upper court must always accept that possibility, and must recognize, too, that such hidden misconduct by a trial judge lies beyond its control."

[53] See more detailed discussion in *In re* J. P. Linahan, Inc., 138 F. 2d 650, 651-652 (C. C. A. 2d 1943).

Indeed, so important are these inscrutable "forces" that it might well be argued that it is less accurate to say that a decision results from the "application" of a rule to the "facts" than to say the following: A decision results from the effect of the stimuli on the personality of the trial judge or the personalities of the jurors; among the stimuli are the legal rules, but there are many others, including the prejudices (largely unconscious) of the judge or jurors for or against the several witnesses and the lawyers.

[54] For fuller discussion, see Frank, *Are Judges Human?* 80 U. OF PA. L. REV. 17, 28, 35-36, 47, 240-241 (and n. 16b) (1931); FRANK, IF MEN WERE ANGELS c. 7 (1942).

See also FRANK, LAW AND THE MODERN MIND 109-112, 116, 134, 149-151, 152 n., 170-185, 302, 309 (1930).

ing that many distinguished legal thinkers,[55] who are rule-obsessed (*i.e.*, who want to believe that decisions are readily foreseeable whenever the pertinent rules are precise), absurdly prattle that clear and definite rules prevent much litigation because (so say these thinkers) most men will not be so foolish as to begin suits in which the relevant rules have such definiteness. Nor can it be ignored that no legal rule, no matter how exact, precludes the injection, by one of the parties to a suit, of an issue of fact which throws open the doors to the reception of oral testimony,[56] and thus to a choice of the "facts" by a trial judge or jury.

These choices of the "facts," resulting from the exercise of the trial courts' guessy discretion, may "leave jurisprudence untouched," but, if so, they leave it looking pretty lifeless, indeed inhuman. The legal rules and principles, the sole foundation of that artificial, ghostly, Cardozian jurisprudence, are stable for the most part, as Cardozo correctly maintains; and, often, predictions of what rules and principles the courts will employ can be fairly exact. Trained lawyers, for example, know the "jurisprudence" relevant to murder trials or automobile accident trials, and can prophesy, with a high degree of reliability, what rules will be applied in such litigation. But what of it? The layman wants to know whether those rules will be applied to the actual facts. If, in a murder case, the correct rule is applied to the wrong facts, an innocent man will be killed by the state.[57] If a trial court, by believing a perjured witness, decides that a deed is a mortgage, the court's legal rule may be impeccable, but the wrong litigant will win.

If, as Cardozo suggests, it be the function of the courts to ensure that, in general, decisions conform to the layman's "reasonable expectations," will a layman consider that a court has discharged its obligations if the legal rules thus conform but, because of an error in fact-finding, the decision in his case does not? As I have said elsewhere: "When the actual facts of a case are not ascertained by a court, its decision may be completely erroneous while yet appearing to be correct. It matters little to a citizen, when he wrongfully loses a lawsuit, whether the decision is the product of the application of the 'wrong' legal rule to the 'right' facts, or the product of the application of the 'right' legal rule to the 'wrong' facts. It is a basic tenet of our theory of justice that cases which are substantially alike should, usually, be decided the same way—according to the same legal rules—and that cases which are substantially different should be decided differently—according to different legal rules. Defects in the ascertainment of the actual facts may result, therefore, in a denial of justice. Because of such defects, cases which, in truth, are very different may seem to the courts to be virtually identical and are decided identically. To the extent, then, that removable defects in fact-finding are not eliminated, proper and practicable individualization of cases does not occur, and avoidable injustice is done."[58]

When one discusses legal certainty and predictability, is it not misleading to discuss merely the certainty of the rules and of predictions as to what rules courts will employ, while refusing to talk of decisions? If a man, defeated in a suit because of a mistake of the trial court about the facts, goes to jail or the electric chair, or loses his business, will it solace him to learn that there was no possible doubt concerning the applicable legal principle?

Usually a client wants his lawyer to prophesy a specific decision relating to a matter in which that particular client has a specific interest. The likelihood that the lawyer

[55] See, *e.g.*, Kantorowicz, *Some Rationalism About Realism*, 43 YALE L. J. 1240, 1241 (1934); Dickinson, *Legal Rules*, 79 U. OF PA. L. REV. 833, 846-847 (1931).

[56] See Corbin, *The Parol Evidence Rule*, 53 YALE L. J. 603 (1944).

See Frank, *A Plea For Lawyer-Schools*, 56 YALE L. J. 1303, 1330 (1947), to the effect that the leaky character of the parol evidence rule leaves legal draftsmanship likewise leaky.

[57] BORCHARD, CONVICTING THE INNOCENT (1932).

[58] FRANK, IF MEN WERE ANGELS 109 (1942).

will successfully predict such a decision will vary with the stage at which he is asked for his opinion:[59]

1. When the client, having just signed a contract, asks what are his rights thereunder, at that time neither the client nor the other party to the contract has as yet taken any steps under the contract. The lawyer's prediction at this stage must include a hazardous guess as to what each of the parties will do or not do in the future. The prediction must frequently be so full of if's as to be of little practical value.

2. After events have occurred which give rise to threatened litigation, the client may inquire concerning the outcome of the suit, if one should be brought.

a. Before the lawyer has interviewed prospective witnesses, his guess is on a shaky foundation.

b. After interviewing them, his guess is less shaky. But, unless the facts are certain to be agreed upon, the guess is still dubious, if the lawyer does not know what judge will try the case; it is more so, if there may be a jury trial, since the lawyer cannot know what persons will compose the jury.

3. After the trial, but before decision, the lawyer's prophecy may be better. For he is now estimating the reaction to the testimony of a known trial judge or a known jury. Yet, if the testimony was oral, that guessing is frequently not too easy.

4. After trial and judgment by the trial court, the guess relates to the outcome of an appeal, should one be taken. It therefore usually relates solely to the rules the upper court will apply to the facts already "found" by the trial judge or jury. At this stage, a competent, trained lawyer can often predict with accuracy. Only this last prediction situation, no others, does Cardozo discuss.

Surely his discussion is altogether too restricted. And surely those interested in the judicial process ought not to disregard such factors, producing uncertainties in decisions, as, *inter alia*, the following: perjured witnesses, coached witnesses, biased witnesses, witnesses mistaken in their observation of the facts as to which they testify or in their memory of their observations, missing or dead witnesses, missing or destroyed documents, crooked lawyers,[60] stupid lawyers, stupid jurors, prejudiced jurors, inattentive jurors, trial judges who are stupid or bigoted or biased or "fixed" or inattentive to the testimony. Nor ought humane men ignore the fact that a party may lose a suit he should win because, in preparation for trial, he cannot afford to hire a detective, an engineer, an accountant, or a handwriting expert.[61] Are we, judges and lawyers, to give no heed to such matters and, because of such heedlessness, to do nothing to improve, so far as practicable, the methods of fact-finding in trial courts?[62]

III

None of these matters did Cardozo deign to consider in these books. In banishing such matters from the province of "jurisprudence," and, correlatively, in excluding them from the judicial process, he did a marked social disservice. For if they are thus ostracized, if eminent judges—setting an example to the bar—will not soil their hands with them, but regard them as legal bastards beyond the pale of proper professional notice, who will attend to them?

[59] For fuller discussion of predictions at various stages, see FRANK, IF MEN WERE ANGELS 73-74, 75-77, 290-293 (1942); Frank, *What Courts Do In Fact*, 26 ILL. L. REV. 645, 647, 649-650 (1932); Frank, *Are Judges Human?* 80 U. OF PA. L. REV. 46-47, 233-234 (1931).

[60] *Cf.* ROVERE, HOWE & HUMMEL (1947).

[61] See Frank, *White Collar Justice*, Saturday Evening Post, July 17, 1943, p. 72; Frank, Book Review, 56 YALE L. J. 589 (1947); United States v. St. Pierre, 132 F. 2d 837, 849 n. 40 (C. C. A. 2d 1942, dissenting opinion).

[62] *Ibid.*

Someone may say in Cardozo's defense that he followed an established tradition, since few books or articles on jurisprudence had mentioned the vagaries of trials and the obstacles to prediction inhering in fact-finding.[63] But, alas, Cardozo lent his imposing authority to the strengthening of that tradition.[64] Worse, in 1932, in his last published address on the subject,[65] he severely criticized those writers who, about that time, were calling attention to the grave deficiencies and unfortunate consequences of that tradition. He ascribed to these writers "anarchical professions," expressions manifesting "a petulant contempt" of "order and certainty and rational coherence," an attempted "degradation of the principles, rules and concepts," " a tendency to exaggerate the indeterminacy . . . or chance element" in the decisions of cases, and an advocacy of the position that "conformity and order are to be spurned by the judge as no longer goods at all." He wholly disregarded the fact that several of those he thus criticized were trying to describe, not to praise, the current workings of the trial courts, that their purpose was to show that the description of the judicial process in conventional books on jurisprudence had grossly exaggerated the extent of legal certainty and had led to gross over-estimations of the capacity of lawyers to predict many decisions in particular lawsuits, because, no matter how certain most of the rules and principles might be, the fact-determinations in many lawsuits could not be foretold. He erroneously asserted that these writers regarded as desirable the amount of existing legal imprecision they described. He took their descriptions of existing conditions as manifestations of their aims and desires, of their ideals, their program. When they said, "This is the way things are," in effect he read them as saying, "This is the way things ought to be, the way we want them to be."

I shall dwell on this startling misreading, because it is the key to an understanding of Cardozo's attitude. At first glance, his strictures may appear to have been provoked by his irritation that the descriptions these writers gave of courthouse ways were strikingly at odds with his own relatively tranquil picture of the judicial process. I think, however, that the explanation is more complicated and runs thus: In this 1932 paper, he criticized all those persons unfortunately called "legal realists" but who might better have been labeled adherents of "constructive legal skepticism."[66] Although they had in common a skeptical attitude towards traditional jurisprudence, by no means did they constitute a homogeneous movement, since they disagreed sharply with one another.[67] Nevertheless, they may be roughly divided into two groups:

[63] The same holds of most such books published subsequently. See, *e.g.*, such otherwise excellent volumes as PATTERSON, AN INTRODUCTION TO JURISPRUDENCE (2d ed. 1946); FRIEDMAN, LEGAL THEORY (1944). See also Frank, Book Review, 59 HARV. L. REV. 1004, 1010-1011 (1946).

Two trial judges, in post-Cardozian books not classified as "jurisprudence," have made admirable departures from conventional theorizing. See ULMAN, A JUDGE TAKES THE STAND (1933); BOK, BACKBONE OF THE HERRING (1941); BOK, I, TOO, NICODEMUS (1946).

Of pre-Cardozian jurisprudential writings, those of Maine are conspicuous for their recognition of the wayward elements in trials. See MAINE, EARLY HISTORY OF INSTITUTIONS 48-50 (1875); quoted in FRANK, IF MEN WERE ANGELS 116-117 (1942); MAINE, *The Theory of Evidence*, in VILLAGE COMMUNITIES 295 (1872).

Pound had occasionally recognized those elements, but, in his curious way, he often wrote as if they did not exist or had very limited effects. As to Pound in this respect, see FRANK, IF MEN WERE ANGELS 63-64, 341-345 (1942).

[64] The more to be deplored because his two books, THE NATURE OF THE JUDICIAL PROCESS and THE GROWTH OF THE LAW, consist of lectures delivered at law schools; and in most of the schools that tradition has a stubborn grip. See, Frank, *A Plea For Lawyer-Schools*, 56 YALE L. J. 1303 (1947).

[65] *Jurisprudence*, an Address before the New York State Bar Ass'n, January, 1932, published in the present volume at 7-46.

[66] See Frank, *Are Judges Human?* 80 U. OF PA. L. REV. 233, 258 and n. 69 (1931); FRANK, IF MEN WERE ANGELS 276 (1942).

[67] See Frank, *Are Judges Human?* 263-264; Frank, *Mr. Justice Holmes and Non-Euclidean Legal Thinking*, 17 CORN. L. Q. 568, 578-579 (1932); Llewellyn, *Some Realism About Realism*, 44 HARV. L. REV. 1222, 1235 (1931); Frank, *A Plea For Lawyer-Schools*, 56 YALE L. J. 1303, 1321-1322, 1327-1328 (re Llewellyn) (1947).

1. The first and larger group (of whom Llewellyn is representative) may conveniently be labeled "rule-skeptics." They resembled Cardozo in that they had little or no interest in trial courts, but riveted their attention largely on appellate courts and on the nature and uses of the legal rules.[68] Some (not all) of this group (Oliphant being the most conspicuous here) espoused the fatuous notions of "behavioristic psychology."[69] Some (not all) of these "rule-skeptics" went somewhat further than Cardozo as to the extent of the existent and desirable power of judges to alter the legal rules.

2. The second and smaller group may conveniently be labeled the "fact-skeptics."[70] They importantly diverged not only from conventional jurisprudence but also from the "rule-skeptics." So far as appellate courts and the legal rules are concerned, the views of the "fact-skeptics" as to existent and desirable legal certainty approximated the views of Cardozo, Pound, and many others not categorized as "realists."[71] The "fact-skeptics'" divergence sprang from their prime interest in the trial courts. Tracing the major cause of legal uncertainty to trial uncertainties, and claiming that the resultant legal uncertainty was far more extensive than most legal scholars (including the "rule-skeptics") admitted, the "fact-skeptics" urged students of our legal system to abandon an obsessively exclusive concentration on the rules.

Cardozo, in his 1932 paper, did not differentiate between the "rule-skeptics" and the "fact-skeptics." Someone might conceivably think that he deemed the "fact-skeptics" not worthy of his attention. But several times he cited the writings of at least one of them, and singled out those writings for special censure. It occasions surprise, therefore, that he said nothing responsive to the features of those writings which distinguished the views of the "fact-skeptics" from his own—the stress on the facts of cases, on juries, on trial judges, on conflicts in testimony, on the difficulties of lawyers trying to prophesy decisions in lawsuits turning on disputed fact-issues, on the frequent inability of citizens to rely on decisions because of the unknowability of future fact-findings. In this paper, Cardozo uttered not one syllable about those subjects. Why, even when specifically criticising the "fact-skeptics," he maintained such silence, I can only explain as follows: so ingrained had become his habit of assuming that legal uncertainty stemmed exclusively from rule-uncertainty, that, when the "fact-skeptics" spoke of legal uncertainty, he jumped to the conclusion that they, too, must mean solely rule-uncertainty. Wherefore, he was deaf to their reiterated assertions that they had chiefly in mind the uncertainties resulting from the contingencies which affect findings of fact.[72]

For instance, they had said that anyone who visited trial courts would see that the outcome of most trials was chancy because of the numerous chance circumstances influencing fact-determinations; that description Cardozo translated as an expression of a preference for "the random or chance element as a good in itself . . . exceeding in value the elements of certainty and order and rational coherence." Again, as a part of their description, they had made the statement that, as trial courts have immense discretion in finding the facts of cases, those courts *can*, and sometimes do, nullify rules by deliberately

[68] See Frank, *A Plea For Lawyer-Schools*, 56 YALE L. J. 1303, 1328 (1947).

[69] Deriding "behaviorism," I criticized them in *Are Judges Human?* 80 U. OF PA. L. REV. 243-248 (1931).

[70] It included Leon Green, Thurman Arnold, myself, and, to some extent, William O. Douglas and Max Radin.

These persons certainly did not agree in all respects with one another.

[71] For data supporting this statement, see FRANK, IF MEN WERE ANGELS 301-307 (1942).

[72] If the reader doubts this statement, I suggest that he skim Frank, *Are Judges Human?* 80 U. OF PA. L. REV. 35, 46-48, 233, 235, 237, 240-241 (and n. 16b), 242 (1931). I mention that article in particular becaue Cardozo cited it in his 1932 address, and referred to me as "the most thorough-going" of the "realists."

or inadvertently finding the wrong facts. Cardozo interpreted that descriptive statement as disclosing a desire that a judge *should have* the power to overturn or nullify any legal rule he disliked. The "fact skeptics" had maintained that *stare decisis* often yields a certainty that is only an illusion, not primarily because of the instability of the rules, but because—even if all the rules were indubitably clear and fixed, and even if always the courts slavishly adhered to the precedents—the facts found by trial courts would frequently be unforeseeable. This, Cardozo charged, was an expression of a disdain for precedents, of a program for wiping out *stare decisis*.

In short, he did his utmost to bring into disrepute these efforts, based on observations of trial courts, to revise the traditional, misleading description of the judicial process.[73] He stood steadfastly by his implicit position that that process and jurisprudence begin and end in the upper courts.

You see the tragic consequences of such a position: if, at any time, the legal rules and principles of a legal system are in pretty good shape, then (according to Cardozo), so also is the judicial process of that system, regardless of whether the decisions of the courts are needlessly unfair or unjust. *By shrinking the scope of the judicial process, by resisting those who would have it mean the administration of justice in all the courts, Cardozo blocked inquiry into the actual performances of courthouse government.*

Our greatest judge, Learned Hand, after a long period of service on a trial bench, remarked in 1926: "I must say that as a litigant I should dread a lawsuit beyond almost anything else short of sickness and death."[74] Cardozo took no note of that remark. If he had, it might have given him pause; for he knew that Judge Hand, in so reporting conditions in our trial courts, was not maintaining the desirability of those conditions or expressing "a petulant contempt" of "order and certainty and rational coherence." Consider this statement by Cardozo: "I sometimes think that we worry overmuch about the enduring consequences of our errors. They may work a little confusion for a time. In the end, they will be modified or corrected or their teachings ignored. The future takes care of such things."[75] Apply that statement to an error about the facts in a trial, as a result of which a man loses his life's savings or is hanged.[76] Did Cardozo mean that "the future takes care of such things?" Of course not. He was not thinking of trials and trial-court decisions but of the legal rules. His was a Hamlet-less Hamlet.

The clue to Cardozo's impatience with those who sought to include descriptions of trial-court operations in the description of the judicial process appears in several passages in his books. "Judgments themselves," he wrote, "have importance for the student so far, and so far only, as they permit a reasonable prediction that like judgments will be

[73] For a more detailed discussion, in this vein, of Cardozo's views, see FRANK, IF MEN WERE ANGELS 288-294 (1942); *cf.* 297-307.

[74] Hand, *The Deficiencies of Trials to Reach the Heart of the Matter*, 3 LECTURES ON LEGAL TOPICS 89, 105 (1926).

"With regard to the trial of pure questions of fact, I am of opinion that the results are . . . much a matter of chance." Sir William Eggleston, *Legal Development in a Modern Community*, in INTERPRETATIONS OF MODERN LEGAL PHILOSOPHIES 167, 188 (1947). Sir William Eggleston is the present Australian Ambassador to the United States.

[75] THE NATURE OF THE JUDICIAL PROCESS 183.

[76] See BORCHARD, CONVICTING THE INNOCENT (1932) Preface: "A district attorney . . . a few years ago is reported to have said, 'Innocent men are never convicted. Don't worry about it, it never happens in the world.' The present volume of sixty-five cases, which have been collected from a much larger number, is a refutation of this supposition. . . . In several of the cases, the convicted prisoner, later proved innocent, was saved from hanging or electrocution by a hair's-breadth. Only by rare good fortune were some of the sentences of hanging or electrocution commuted to life imprisonment . . . so that the error could still be corrected. How many wrongfully convicted persons have actually been executed, it is impossible to say."

rendered if like situations repeat themselves. . . . When the uniformities are sufficiently constant to be the subject of prediction with reasonable certainty, we say that law exists."[77] Cardozo sought solely uniformities, knowing that, if un-uniformities also exist, the predicter is in trouble; but since in most trial-court fact-finding, much of un-uniformity is present, that trouble often arises. In another passage, he said: "One of the most fundamental social interests is that law shall be uniform and impartial. There must be nothing in its action that savors of prejudice or favor or even arbitrary whim or fitfulness."[78] Yet decisions based on jury verdicts notoriously lack uniformity and impartiality, are replete with prejudice and fitfulness. You see why Cardozo failed to discuss them. Again, he said, "The eccentricities of judges balance one another."[79] So they often do in appellate courts composed of several judges. But the same cannot be said of the divers trial judges and juries when, in separate courtrooms, they hear witnesses and find facts. As I have noted elsewhere, "There is no standardization of judges and jurors so that all of them will be sure to react in identical fashion to any given body of conflicting testimony. Judges and juries vary in their respective intelligence, perceptiveness, attentiveness and other mental and emotional characteristics which are operative while they are listening to, and observing, witnesses."[80] From all such disturbing thoughts Cardozo screened himself, by rejecting consideration of *nisi prius* courts. One cannot believe that he would have written as he did if he had had several years of experience as a trial judge. He had a blind spot. He suffered from an occupational disease to which upper-court judges are susceptible—appellate-court-itis. (That is why, one surmises, his jurisprudence omits, among other things, what might be termed "juriesprudence.")

At one point, for a moment, he almost gives the show away. He quotes Haldane's comment that his own philosophic interest in principles had been valuable to him in his practice at the bar. "It did not help in the work of cross-examination," Haldane says in these quoted comments. "I was never good at that, nor in the conduct of *nisi prius* cases. But it was invaluable in the preparation for the presentation of great questions to the Supreme Tribunals, where the judges were keen about principles and were looking out for help from the advocate."[81] That hint Cardozo did not follow up. It cannot be overlooked that never does he cast a glance at the many books on trial techniques, "hints to advocates," and such. He cites Wigmore's *Evidence,* but not Wigmore's *Principles of Judicial Proof* (1st ed. 1913) which contains a wealth of detail about vicissitudes of trials. Perhaps the secret of Cardozo's avoidance of such books is that, as Morgan suggests, they should not be read "by those who want to believe, and want others to believe, that a lawsuit is a proceeding for the discovery of truth by rational processes."[82] It is worthy of remark that Chief Justice Taft, doubtless more conservative in most respects than Cardozo, did interest himself in the deficiencies of trial courts, did try to better the litigating chances in those courts of the underprivileged.[83] What explains this difference between those two men? Probably the fact that Taft, from personal experience, knew more about the lower courts.

[77] THE GROWTH OF THE LAW 38-39.
[78] THE NATURE OF THE JUDICIAL PROCESS 112.
[79] *Id.* at 177.
[80] FRANK, IF MEN WERE ANGELS 78 (1942).
[81] *Jurisprudence* 30-31.
[82] Book Review, 49 HARV. L. REV. 1387, 1389 (1936). There Morgan, reviewing Goldstein's *Trial Technique* (1935), said: "Intended as a lawyer's book, it will in all probability be read only by lawyers and those who would be lawyers. And fervent prayers that the book be read by no others should be raised by those who want to believe, and want others to believe, that a law suit is a proceeding for the discovery of truth by rational processes. . . . If only a reviewer could assert that this book is a guide not to the palaces of justice but to the red-light district of the law! But a decent respect for the truth compels the admission that Mr. Goldstein has told his story truly."
[83] See WILLOUGHBY, PRINCIPLES OF JUDICIAL ADMINISTRATION 33, 206 n. 493, 591 (1929).

In the kind of courtroom where Cardozo spent most of his professional life, the atmosphere is serene—stratospheric. There, lawyers alone address the court; and they must do so with decorum, in an orderly, dignified manner. Not so in the trial courtroom. Absent there the stratospheric hush. It is, as Wigmore notes, "a place of surging emotions, distracting episodes, and sensational surprises." The drama there, full of interruptions, is turbently enacted by flesh-and-blood witnesses and lawyers. In the upper court the clashes between witnesses and counsel appear only in reposeful printed pages. Little wonder if a judge, after many years in such a serene court, grows forgetful of the unserenity characteristic of trials, develops a myopia which limits his range of vision.

Relevant here is the attitude of persons accustomed to years of near-sightedness. "When," we are told, "finally they decide for themselves that they ought to wear glasses, they are often disappointed. . . . The following conversation is fairly common: Patient: 'Doctor, I think these glasses are wrong. I can't wear them.' Doctor: 'You seem to be able to see quite clearly with them. What is wrong?' Patient: 'I can't bear it. They make all my friends look so ugly. They have spots on their faces and their collars are dirty, and all the houses look so untidy and old. I don't like it. I don't want to see all that detail.' All one can say is that it is a pity such a patient was allowed to grow up so out of touch with reality, as this attitude of not wanting to see what is ugly may extend to one's attitude towards life and lead to a shelving of responsibility."[84] This attitude of not wanting to see reality produces "shortsighted policies."[85] So, I think, with Cardozo. He exploited his prestige to block a movement aimed at preventing the legal profession from shelving its responsibility for conditions in the trial courts. That was indeed shortsighted policy. He had a "want to believe" and "a want to have others believe" that, on the whole, our courts employ thoroughly rational procedures. He treated his "want," his wish, as if it were a statement of existing courthouse realities. In other words, often when he said, "This is the way things are," he should have said, "This is the way things ought to be." Suppose, now, that he had so recognized, that, correcting his shortsightedness, he had perceived that his purported description of the judicial process was but a want, a wish, an ideal, an objective to be achieved by that process. What then? Then he would have converted his wishful thinking into "thinkful wishing."[86] Then he would have felt eager to investigate our entire court system, including our trial courts, to ascertain how far it fell short of his ideal. Having ascertained, as he would have, its obvious shortcomings, he—a moralist and keen for justice—would have made detailed suggestions to bring that system closer into line with his aspirations.[87]

The perspective which Cardozo's attitude obscured, I recently summarized in an opinion[88] as follows: "The 'substantive' legal rules, civil or criminal, embody social policies ('social value judgments'). To enforce, and thus give effect to, such policies is considered one of the principal duties of the courts. They discharge that duty, however, not at wholesale but at retail, by applying those rules in specific lawsuits to the particular

[84] MANN AND PIRIE, THE SCIENCE OF SEEING 160-161 (1946).

[85] *Ibid.*

[86] For more detailed discussions of the use of ideals as postulates, of "wish postulates" and "thinkful wishing," see Frank, *Mr. Justice Holmes and Non-Euclidean Legal Thinking*, 17 CORN. L. Q. 568 (1932); FRANK, IF MEN WERE ANGELS 191, 364-365 (1942); FRANK, FATE AND FREEDOM 216-217 (1945) (*cf.* 298-308); Frank, *A Plea For Lawyer-Schools*, 56 YALE L. J. 1303, 1338 (1947); Frank, *Scientific Spirit and Economic Dogmatism*, in the volume SCIENCE FOR DEMOCRACY 11, 13, 17 (1946).

[87] Cardozo did manifest a lively interest in reform of some of the rules of procedure and evidence (See, *e.g.*, THE NATURE OF THE JUDICIAL PROCESS 156; *A Ministry of Justice*, reprinted in this volume, 357, 365). But again it was an interest in rules, not in the actual workings of the trial courts. See my comments on the "procedural reformer" in Frank, *A Plea For Lawyer-Schools*, 56 YALE L. J. 1303, 1327 (1947).

[88] *In re* Fried, 161 F. 2d 453, 462-464 (C. C. A. 2d 1947).

facts of those respective suits as 'found' by the courts. As a 'substantive' rule merely declares that specified legal consequences will be attached to a specified state of facts, the rule should be operative only in particular instances where those facts actually occurred. Accordingly, the social policy embodied in any such rule is not actually enforced when, in deciding a case, a court, through misapprehension of what actually occurred, applies that rule to facts which in truth never existed. The whole job then miscarries: Mistakenly to apply a rule to non-existent facts—to facts mistakenly 'found'—is no less unjust, no less a defective operation of judicial administration, than to apply an erroneous 'substantive' legal rule to the actual facts. Either way, the policy expressed in the correct rule is frustrated. An error in 'finding' the facts thus yields what might be called 'injustice according to law.' The facts involved in any case are past facts. They do not walk into the courtroom. Judicial fact-finding, a human process by which a man or some men attempt to reconstruct a segment of an 'objective' past, is necessarily fallible. For it is a job of history-writing, and, like all history-writing, inescapably involves 'subjective' factors and encounters other obstacles sometimes insurmountable. But courts cannot shirk that job. . . . Unfortunately, the major efforts of those who have tried to improve our legal system have been devoted either to improvements in other phases of 'procedure' or in the 'substantive' legal rules. Those improvements will be needlessly nullified just to the extent that the fact-finding process remains insufficiently scrutinized and, consequently, needlessly defective. Fact-finding is today the soft spot in the administration of justice. In considerable measure that is true because the reformers have largly disregarded the actual fact-finding methods used by the trial courts which, as they are the chief fact-finders, and for other reasons, constitute the most important part of our judicial system; even the procedural reformers have restricted their attention chiefly to those phases of trial court 'procedure' which manifest themselves in upper-court, and occasional trial-court, opinions. It has been too little noticed that a 'substantive legal right'—an 'interest' said to be 'legally protected' by a 'substantive' legal rule—has no practical value when a court by mistakenly mis-finding the facts—because of missing witnesses or documents, or because it believes the testimony of witnesses who in truth are inaccurate, etc.—decides that the claimant has no such 'right' or 'interest.' Doubtless, for analytic purposes, there is often much utility in formally differentiating between 'substantive' and 'procedural' rights (or 'primary' and 'secondary,' or 'antecedent' and 'remedial,' or 'telic' and 'instrumental' rights). Once, however, it is stated, in terms of this formal analysis, that a judicial decision is the 'result of the application of the [substantive] rule of law to the *facts procedurally established*,' it becomes clear that a mistaken 'procedural establishment' of the facts destroys, for court-room purposes, the asserted 'substantive right,' from which it follows that, so far as courts are concerned, the effective assertion of any 'substantive right' depends entirely on the claimant's ability to maintain his so-called 'procedural right.' The Roman lawyers perhaps sensed this truth when they spoke of the 'procedural consumption' of a 'right of action' by which it was transformed into a 'right to judgment.' In other words, for practical court purposes, no 'substantive' right exists—whether it be a right asserted by a private person or by the government in its role of vindicator of a 'substantive' criminal rule—unless a court gives an enforceable judgment in favor of the alleged right-holder; and, ordinarily, a court will not give such a judgment, even when it uses a seemingly 'correct' rule, if it goes wrong on the facts. Of course, similarly a mistake in fact-finding may cause an erroneous judgment adverse to one who defends against an asserted claim. This, perhaps, appears more clearly if we crudely schematize the formal theory of the decisional process (i.e., the theory that a judicial decision or judgment is the product of a 'substantive' legal rule applied to the facts of the case) by saying: R X F = D—when R is the rule, F the facts, and D the

decision or judgment. On that basis, an erroneous F will lead to an erroneous D. As the F consists of the trial court's belief as to what were the actual past facts, the F, and therefore the D, will be erroneous if the court reaches its F by reliance on inaccurate evidence.

"No matter, then, how excellent the 'substantive' legal rules (the R's) and the social policies they embody, specific decisions will go astray, absent competent fact-finding. (Holmes, J., once said that 'the only use of the forms is to present their contents, just as the only use of a pot is to present the beer. . . , and infinite meditation upon the pot will never give you the beer.'). All of which, I think, goes to show that our trial courts should assume a larger responsibility for the ascertainment, as near as may be, of the actual facts of litigated disputes."

IV

In an address in 1931, Cardozo spoke of "the myths that gather around institutions," saying that often such "myths are really the main thing," and "greater than the reality."[89] Maybe those observations were revelatory. For, in all his writings, Cardozo helped to perpetuate what I would call the Upper-Court Myth, the myth that upper-court opinions are "the main thing" in courthouse government. That myth I think deplorable. It bestows upon us appellate judges too much public kudos.[90] It obscures the transcendent importance of trial courts, and the fact that trial judges encounter far greater difficulties than we do. In part, those difficulties inhere in the character of their job; in part they derive from our antiquated trial procedures. To improve the administration of justice we need, at a minimum, to overhaul our jury system; to revise our evidence rules; to give special training for the trial bench; to augment (without displacing the essential aspects of the adversary procedure) the responsibility of government for insuring that all important and practically available evidence is presented in trials.[91] Those and other im-

[89] *Faith and a Doubting World,* published in the present volume, 99, 104-105.

[90] "Rule-worship . . . conceals the prime importance of adequate fact-finding. It causes us to underrate the trial judge, to place too much reliance on and give too much kudos to the upper-court judge. A shift in perspective here may well lead to augmenting the dignity of lower-court judges, to changes in their method of selection and to liberating them from what may some day seem to be unwise interferences by appellate judges." Frank, *Are Judges Human?* 80 U. OF PA. L. REV. 242 (1931). See also GREEN, JUDGE AND JURY 394 (1931).

Judge Bok wrote recently: "The best legal brains should be magistrates . . . since they are closest to people's problems and have to deal with them raw; the next best should be in the trial courts; and any young essay writers just out of law-school would do as appellate judges, since it requires only technicians to provide a system of stare decisis and the street would ultimately adapt the law to itself anyway." BOK, I, TOO, NICODEMUS 321 (1946).

It is of interest here that Cardozo highly esteemed the criticisms of opinions published in the law reviews. (See GROWTH OF THE LAW 11-13.) For many such criticisms are the products of "young essay writers just out of law-school" or still in school. Doubtless those essays have proved invaluable to lawyers and judges—with respect to the rule-aspect of the judicial process. But it tends to show Cardozo's indifference to the fact-finding job that he wrote, "More and more we are looking to the scholar in the study, to the jurist rather than to the judge or lawyer, for inspiration and for guidance." GROWTH OF THE LAW 11.

[91] See Frank, *White Collar Justice,* Saturday Evening Post, July 17, 1943, p. 72; United States v. St. Pierre, 132 F. 2d 837, 849 n. 40 (C. C. A. 2d 1942, dissenting opinion).

I trust no one will think I am fatuous enough to believe that courthouse government will ever be perfect. But recognition of the unattainability of perfection is no excuse for not striving for improvement. See FRANK, Introduction to PAUL, STUDIES IN TAXATION 5 (1937); United States v. Forness, 125 F. 2d 928, 942-943 (C. C. A. 2d 1942); *In re* Fried, 161 F. 2d 453 (C. C. A. 2d 1947); FRANK, IF MEN WERE ANGELS 136-139 (1942); Frank, *A Plea For Lawyer-Schools,* 56 YALE L. J. 1303, 1327, 1339 (1947); FRANK, FATE AND FREEDOM 337 (1945).

Among the apparently ineradicable difficulties is a factor that deserves much study—what may be called the "gestalt" factor in the decisional process of trial courts. See my dissenting opinion in

provements will not be achieved as long as judges of great eminence, like Cardozo, continue to induce belief in the Upper-Court Myth.

It is high time that we apply to that myth all the skills of what Samuel Butler called the Art of Covery. "This," he said, "is as important . . . as Discovery. Surely the glory of finally getting rid of and burying a . . . troublesome matter should be as great as that of making an important discovery."[92]

Old Colony Bondholders v. New York N. H. & H. R. R., 161 F. 2d 413, 431, 449, 450 (C. C. A. 2d 1947); *In re* Fried, 161 F. 2d 452, 463 n. 28 (C. C. A. 2d 1947). I hope soon to explore that theme elsewhere.

[92] THE NOTE-BOOKS OF SAMUEL BUTLER 180 (1917).

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